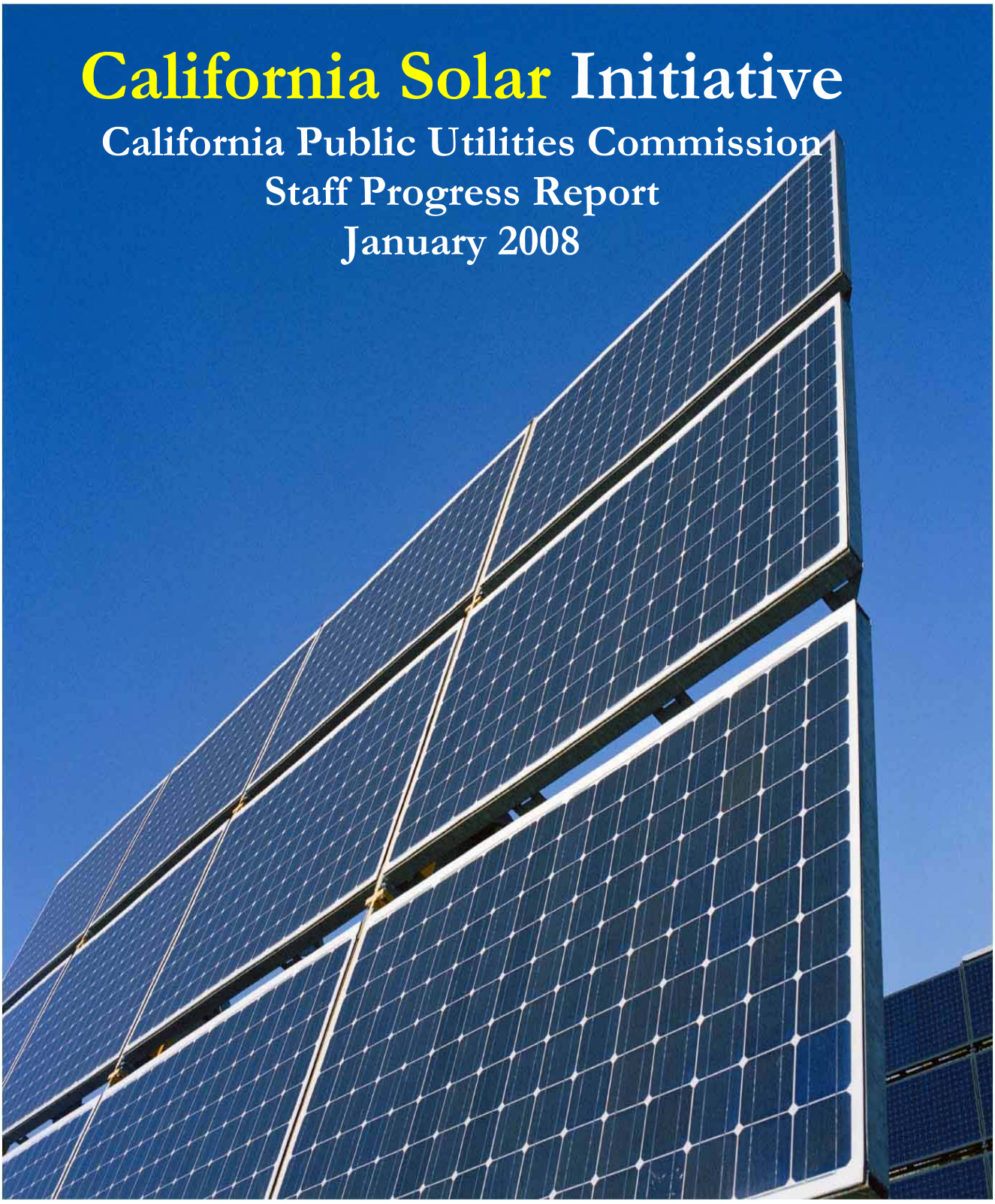
California Solar Initiative

California Public Utilities Commission

Staff Progress Report

January 2008



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1. Executive Summary

The California Public Utilities Commission (CPUC or Commission) Energy Division Staff have prepared this report to describe early progress on the CPUC portion of the California Solar Initiative, the second largest solar incentive program in the world.

The CPUC launched the investor-owned utility territory portion of the California Solar Initiative (CSI) on January 1, 2007, and the new program has already generated enormous new interest for solar in California. On January 1, 2007, the majority of the California solar market underwent two important transitions: (1) the state moved from capacity-based incentives (and a higher level for small systems) to fluctuating incentives based on performance factors and an entirely new application process; and (2) the state's two largest incentive programs reorganized into two new programs, switching from administration based on system size to one based on building type.

Despite the transition to a new program, demand is robust. In the first twelve months, demand for CPUC-administered California Solar Initiative incentives exceeds California's total installed solar from the previous 26 years. Since 1981, California installed 198 megawatts (MW) of grid integrated solar statewide.[1] From January 1 through December 31, 2007, the California Solar Initiative program has applications for 208.6 MW of new solar. Disregarding applications that have been withdrawn or rejected, the program has received 7,541 applications, worth $558 million in incentives. Residential applications dwarf all others (6,712 applications) and are 89% of the total applications, but only comprise 15% of the total MW in the active applications. The 829 non-residential applications from commercial, government, and non-profit applicants make up 11% of the total applications. The non-residential applications are 176.8 MW in active applications.

This staff progress report mainly describes progress in the CPUC-managed CSI incentive program based on program data generated on January 10, 2008. This report provides some insight into the Commission's attention and response to program roll-out issues, includes an update on upcoming program plans and presents program demand statistics. Sections 2 and 3 of this report provide general background information on the program. Section 4 provides information on the CSI Program's early activities and explains how the CPUC moved to resolve a number of early implementation issues. Section 4.1 highlights some of the areas where the Commission has plans to modify or expand the CSI Program. Section 4.2 identifies the current status of the parts of the CSI Program other than the mainstream incentive program, including solar hot water pilot, research and development, and low-income programs. Section 5 provides program demand statistics based on demand through December 31, 2007.

The demand for solar incentives started slowly in early 2007, in a manner similar to that of prior years after an incentive level decline, and as the state transitioned to the new performance-focused incentives. However, demand for the CSI Program incentives picked up on in the second quarter of the year and remained fairly strong through the remainder of the year. At the

[1] California Energy Commission, April 18, 2007. "Amount (MW) of Grid-Connected Solar Photovoltaics (PV) in California, 1981 to Present", available at: http://www.energy.ca.gov/renewables/emerging_renewables/

beginning of 2007, the CEC was still processing reservations under the ERP program, and the CSI Program was just starting. The total number of applications reserved under the ERP and SGIP programs in 2006 was 7,906, and the total reserved for the ERP (carryover) and CSI programs in 2007 was 10,432. In terms of MWs, the ERP and SGIP programs reserved 109.9 MW in 2006, and the ERP and CSI programs reserved 146.5 MW in 2007, of which 127.6 MW is CSI. Therefore, while there was a lot of concern early in the year about the disruption caused by switching programs, the demand for solar rebates has grown and based on the demand for incentives, installed capacity is expected to grow at very high rates. Applicants have 12 months from the time they request an incentive to install their project, so there is often a year or more lag between the demand for incentives and completed projects, i.e. installed MWs showing up in the statistics.

Although the majority of solar installations to date are from pre-CSI programs, CSI-funded solar installations are already producing electricity. As of December 31, 2007, there are 2,719 projects installed, operating, and have been either received payment, or are in the pipeline to be inspected and/or paid. The installations add 17.9 MW of new solar capacity for $46 million in rebates. However, the bulk of the applications and megawatts are still in the pipeline – 170 MW and $455 million. A small number of applicants have dropped out (181), albeit worth a substantial number of megawatts (23.7 MW). The MWs that have dropped out of the program have been reallocated to the currently applicable incentive level. While it is too early to gauge certain program metrics such as the risk of high drop-outs or the impact of the CSI Program on photovoltaic (PV) system costs in California, it is clear that the program is off to an exciting start.

As noted in Section 4, the CPUC has responded to early implementation concerns throughout 2007, reducing the initial application paperwork and increasing information about the program through improved marketing and outreach activities.

- In January 2008, the Commission reissued the Program Handbook to reduce the paperwork requirements of the CSI Program and allow for non-PV incentives. The new Program Handbook reflects approved administrative streamlining measures and keeps the Program Handbook current with recent CPUC decisions.
- In December 2007, the Commission adopted a Resolution to approve the integration of non-photovoltaic solar technologies in the incentive program. While this change was envisioned since the start of the program, the Commission had not had sufficient data and information to make these technologies eligible for incentives.
- In September 2007, the Commission approved a Resolution to streamline paperwork and improve the application process.
- In May 2007, the Commission approved an Interim Marketing and Outreach program.
- Throughout 2007, the Program Administrators offered training classes on the program. Since January, the Program Administrators have held 67 trainings with over 2,942 attendees.
- An online application database Powerclerk launched in August 2007, and the data reporting side of the database launched in September 2007. The Powerclerk database functionality will be further expanded throughout 2008.

The CPUC expects to issue future versions of this Progress Report to inform stakeholders of program developments, as well as provide updated information about program demand and other program administration metrics.

2. Statewide CSI Goals and Program Overview

- The California Solar Initiative has a goal to create 3,000 MW of new, solar-produced electricity by 2017 - moving the state toward a cleaner energy future and helping lower the cost of solar systems for consumers. The CSI statewide budget is $3.3 billion over 10 years.
- With a 10-year commitment for solar incentives, and under legislative direction, California aims to build a self-sustaining solar industry free from ratepayer subsidies after 2016.
- The California Solar Initiative has **three distinct program components**, each with a portion of the statewide budget and solar installation goals, as shown in Table 1:
  - The ***CPUC*** directs solar incentives to customers in investor-owned utility territories (about 75-80% of electric use) for existing homes and existing and new commercial, industrial, and agricultural properties. This program component is allocated $2,167 million over 10 years, and the goal is to reach 1,940 MW by 2016. This goal includes 1,750 MW from the mainstream incentive program and 190 MW from the forthcoming low-income resident incentive program. This Progress Report focuses on the CPUC program, with an emphasis on the mainstream incentive program.
  - The ***California Energy Commission*** advances solar in new home construction, through its New Solar Homes Partnership. This program component is authorized $400 million over 10 years, with a goal of 360 MW.
  - The ***Publicly Owned Utilities (POU) component requires*** each municipal utility to offer an equivalent incentive program, an aggregate commitment of $784 million over 10 years, toward a goal of 660 MW.

Table 1. California Solar Initiative by Program Component, 2007-2016

Program Authority	California Public Utilities Commission	California Energy Commission	Publicly Owned Utilities (POU)
Budget	$2,167 million	$400 million	$784 million
Solar Goals (MW)	1,940 MW	360 MW	700 MW
Scope	All systems in IOU areas except new homes	New homes, IOU territories	All systems in POU areas
Audience	Various	Builders, home buyers	Various
Begins	January 2007	January 2007	January 2008

2.1 CPUC CSI Program History

- The CSI Program builds on nearly 10 years of state solar incentives. Prior to January 1, 2007, the state solar incentive programs were organized according to the size of the system: for small systems (residential and commercial under 30 kW), the California Energy Commission managed the Emerging Renewables Program (ERP) since 1998, and for larger systems, the CPUC managed solar incentives through its Self-Generation Incentive Program (SGIP, for systems over 30 kW) since 2001.
- In August 2004, Governor Schwarzenegger affirmed his support for solar energy, and announced the Million Solar Roofs program.
- In January 2006, the CPUC collaborated with the CEC to develop the framework of the CSI Program through 2016, resulting in Decision (D.) 06-01-024.
- In March 2006, the CPUC initiated a new distributed generation Rulemaking (R.) 06-03-004, to implement the CSI Program.
- In April 2006, the CPUC divided the CSI Program decision-making on the many elements into three phases:
    - **Phase I** addresses nine core CSI Program design issues, including performance-based incentives, incentive adjustment mechanism, federal tax incentives, non-photovoltaic solar incentives, energy efficiency standards, program administration, solar system metering, system size cap, and developing a program handbook.
    - **Phase II** addresses four additional CSI elements: incentives and financing assistance for low income projects, marketing and outreach, research, development and demonstration (RD&D), and program evaluation.
    - **Phase III** addresses Self Generation Incentive Program (SGIP) rules and management, participation by small multi-jurisdictional utilities in the CSI Program, and net metering for community choice aggregators (CCA).
- In August 2006, the CPUC adopted D.06-08-028 that established the CSI Program incentive schedule, program budgets, system performance and metering requirements, and other fundamental program design decisions.
- In August and September 2006, Governor Schwarzenegger signed SB1 and AB 2723, which authorized the CPUC's CSI Program and introduced a number of new program requirements related to the mainstream incentive program and the low-income program.[2]
- In December 2006, the CPUC revised the CSI Program requirements and design features to comply with the new laws, and adopted D.06-12-033. Also, the CPUC issued the CSI Program Handbook for the first time.
- In January 2007, the CPUC determined that distributed generation system owners (including CSI systems) retained ownership of their Renewable Energy Credits (RECs) in D.07-01-018.

[2] Chapter 132, Statutes of 2006 (SB 1, Murray) and Chapter 864, Statutes of 2006 (AB 2723, Pavley).

3. CSI Solar Incentive Program Basics

- In January 2007, the CPUC's CSI Program launched with a budget of $2.167 billion (2007-2016) as detailed in **Error! Reference source not found.**.

Table 2. CPUC California Solar Initiative Budget, 2007-2016

Program Category	**Budget** ($ Million)
General Market Program Subtotal	**$1,897**
Direct Incentives to Consumers for PV and non-PV technologies	*$1,707*
Program Administration, Marketing & Outreach, Evaluation (10%)	*$190*
Low-Income Program (10%)	**$217**
Research, Development, Deployment and Demonstration (RD&D)	**$50**
San Diego Regional Energy Office Solar Hot Water Pilot	**$2.6**
Total CPUC CSI Budget	**$2,167**

- The CPUC designated three Program Administrators to administer the general market program (mainstream incentive program) that provides solar incentives to consumers for PV and non-PV solar technologies. The three Program Administrators are:
    - Pacific Gas & Electric (PG&E),
    - Southern California Edison (SCE), and
    - California Center for Sustainable Energy (CCSE, formerly known as the San Diego Regional Energy Office) in San Diego Gas & Electric's territory.
- The CSI Low-Income Program and the CSI Research, Development, Deployment and Demonstration (RD&D) Program have separate budgets and administration plans.
- The CSI pilot solar water heating program is administered by CCSE, and is only available in San Diego Gas & Electric service territory.

3.1 CSI Incentive Program Resources

- The CSI statewide consumer website, includes information on the CPUC, CEC, and POU programs, including the CSI Program Handbook: www.GoSolarCalifornia.ca.gov
- The CSI Program Administrators developed a tool to calculate the up-front EPBB incentive, known as the EPBB Calculator: www.csi-epbb.com
- The CSI Program Administrators launched an online application tool and reporting database, known as Powerclerk: csi.powerclerk.com
- Up-to-date information about the program's current incentive level, or "step" can be found on the online CSI Trigger Tracker: www.csi-trigger.com.
- Information about the CPUC regulatory proceeding that deals with the CSI Program can be found online at: www.cpuc.ca.gov/PUC/energy/solar/.
- The CSI pilot solar hot water program: www.energycenter.org

3.2 CSI Incentive Levels

- The CSI Program pays incentives for solar installations, and the program is structured such that the incentive level decreases over ten steps to zero as the total installed capacity of solar energy systems grows. To ensure equity for ratepayers supporting this program, the CPUC divided the overall goal of 1,750 MW[3] by Program Administrator and by customer class, residential and non-residential (commercial and government/non-profit). Once the total number of MWs for each step is reached within a particular customer class, the Program Administrator moves to the next step and offers a lower incentive level for that class. Therefore, high commercial demand in SCE's territory will not lower the incentive offered to PG&E's residential customers, and so on.

- Budgets and megawatt goals are divided among the three IOU territories by electricity sales. Table 3 shows the MW goals of the program are divided by PG&E, SCE, and CCSE according to the following ratio: 43.7%, 46.0%, 10.3%, respectively.

- As each Program Administrator receives applications for solar incentives, it tracks the total MWs reflected in the applications received. Table 3 shows the CSI Program targets by Program Administrator and customer segment. It also shows the current step for each Program administrator and each customer segment, based on CSI Program demand as of January 11, 2008.

[3] The goal for the CPUC portion of the CSI program is 1,940 MW, divided into 1,750 MW for the mainstream incentive program, and 190 MW for the low-income program.

Table 3. CSI MW Targets by Program Administrator and Customer Class
Note: Shading Denotes Current Step as of January 11, 2008.

		PG&E (MW)		SCE (MW)		CCSE/SDG&E (MW)	
Step	**MW in Step**	**Res**	**Non-Res**	**Res**	**Non-Res**	**Res**	**Non-Res**
1	50	--	--	--	--	--	--
2	70	10.1	20.5	10.6	21.6	2.4	4.8
3	100	14.4	29.3	15.2	30.8	3.4	6.9
4	130	18.7	38.1	19.7	40.1	4.4	9.0
5	160	23.1	46.8	24.3	49.3	5.4	11.0
6	190	27.4	55.6	28.8	58.6	6.5	13.1
7	215	31.0	62.9	32.6	66.3	7.3	14.8
8	250	36.1	73.2	38.0	77.1	8.5	17.3
9	285	41.1	83.4	43.3	87.8	9.7	19.7
10	350	50.5	102.5	53.1	107.9	11.9	24.2
Subtotal		252.4	512.3	265.6	539.5	59.5	120.8
Totals		**764.8**		**805.0**		**180.3**	
Percent		**43.7%**		**46.0%**		**10.3%**	

Two Incentive Paths: EPBB and PBI

- The CPUC program's two incentive paths are PBI and EPBB.
  - Performance Based Incentive, or PBI: As of January 1, 2008, all systems over 50 kW must take the PBI, and by 2010 all system over 30 kW must be on PBI. The PBI pays out an incentive, based on actual kWh production, over a period of five years.
  - Expected Performance-Based Buy-down, or EPBB: In 2008, systems smaller than 50kW can receive a one-time, up-front incentive based on expected performance, and calculated by equipment ratings and installation factors (geographic location, tilt and shading). EPBB is available for systems under 30 KW after 2010. Systems eligible for EPBB can choose to opt-in to the PBI system described above.
  - Figure 1 and Figure 2 show the current incentive payment for each incentive path and each Program Administrator, according to the current step and customer segment. The figures also show the dates on which the step levels changed for each customer class. For a complete listing of all incentive amounts for all steps and all customer types, see the CSI Program Handbook. For information on the currently applicable step for each customer class, see the CSI Trigger Tracker.
    - SCE is in Step 2 for Residential (Res) and Step 4 for Non-Residential (Non-Res) incentives.
    - CCSE is in Step 3 for Residential and Step 4 for Non-Residential incentives.
    - PG&E is in Step 3 for Residential and Step 4 for Non-Residential incentives. Based on the CSI Trigger Tracker, PG&E is expected to change to Step 5 for Non-Residential in January 2008.

- The majority of commercial incentives are going to private sector commercial properties rather than non-profits and governments, except in the San Diego territory. The CPUC is

monitoring how the combined commercial and non-profit targets are affecting incentive levels.

Figure 1. Step and Incentive Level Changes for Residential Projects

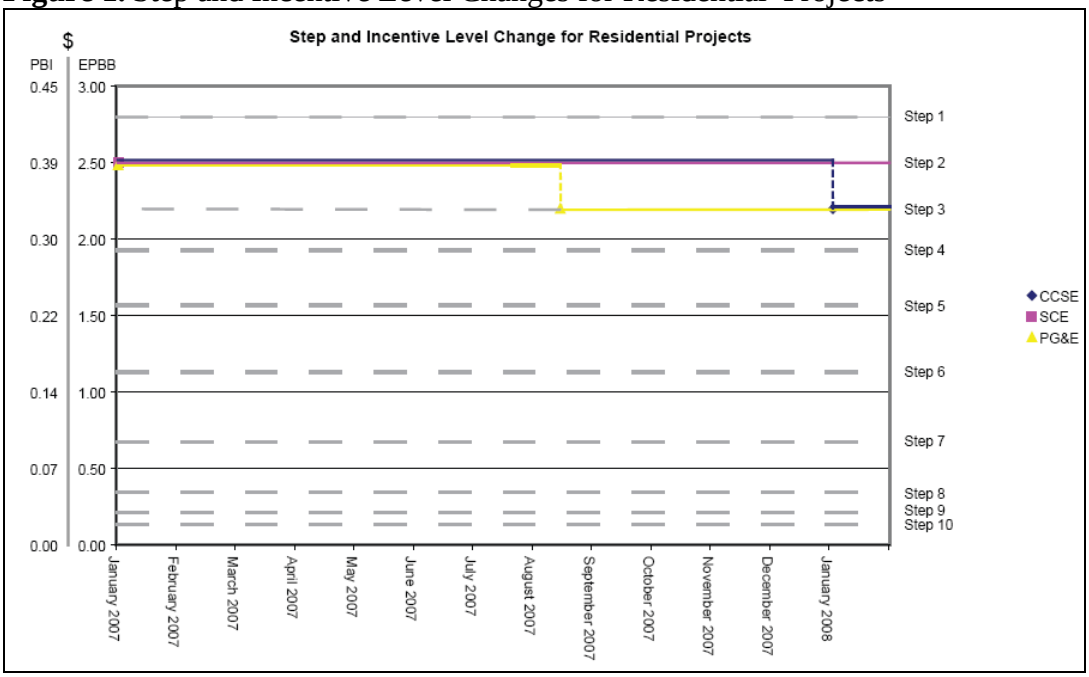
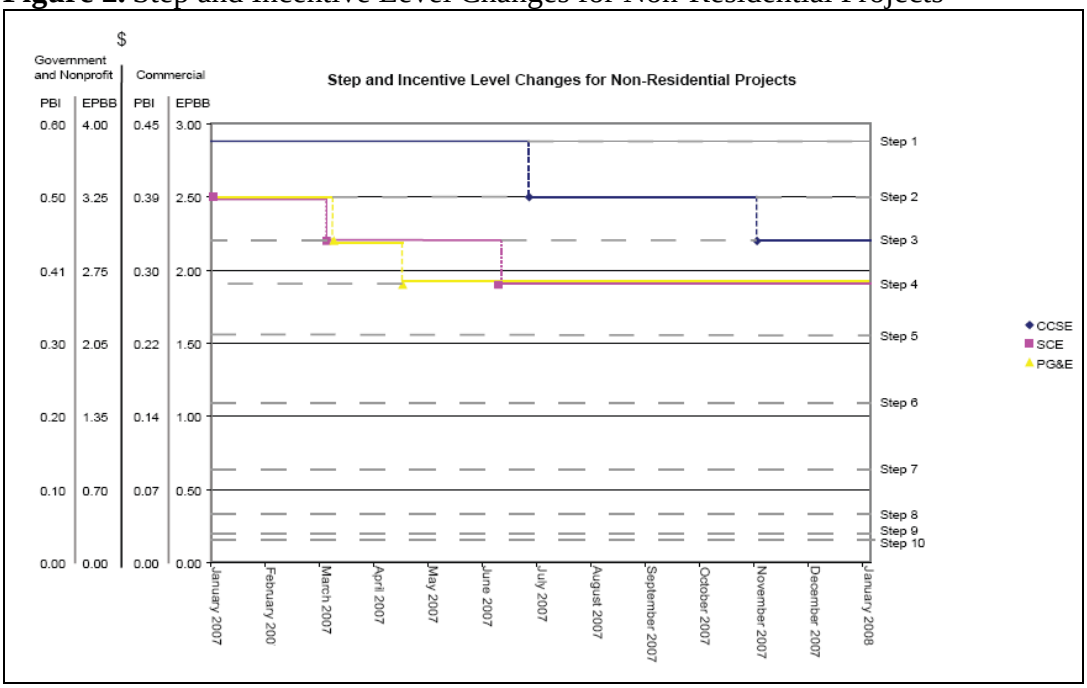


Figure 2. Step and Incentive Level Changes for Non-Residential Projects



4. CPUC CSI Program Implementation

The CPUC's mainstream incentive program launched on January 1, 2007, and the CPUC has been carefully monitoring CSI Program implementation throughout the inaugural year. As program implementation issues have arisen, the CPUC has taken action to address them to ensure the program's success. The CPUC will consider additional program modifications, as necessary, some of which are already identified and discussed below.

Some of the important activities and developments for the first year of the mainstream incentive program include:

- ***Program Forum:*** The CPUC established the CSI Program Forum as a quarterly public meeting intended to allow stakeholders to learn about program updates, discuss program implementation issues and discuss potential solutions. If the discussion results in a set of proposed program changes, one of the Program Administrators formally proposes the changes through the CPUC comment process.[4] In 2007, the CSI Program Forums were held in April, June and October. The next Program Forum will be held on January 17, 2008 in San Francisco.
- ***Administrative Streamlining***: In the spring of 2007, the solar industry voiced concern with a number of new program requirements and the amount of paperwork linked to rebate applications. In response, at the June CSI Program Forum, the Program Administrators proposed over a dozen changes, which met with a positive response from the industry. The Program Administrators submitted the proposals to the CPUC in July via an Advice Letter, and the CPUC approved changes via Resolution E-4114 on September 6, 2007. The Program Administrators developed a second set of streamlining proposals, which were submitted via Advice Letter (AL 2185-E and AL 2186-E) on November 27, 2007 and approved by the CPUC in late December. (The second Advice Letter was not protested, therefore it did not require a Resolution and the approval process was faster.) These second round of changes further reduce CSI Program application paperwork, and are included in the new CSI Program Handbook, released in January 2008.
- ***Program Handbook*:** The CSI Program Handbook was released initially in December 2006, and it serves as a key resource, providing a compendium of all program rules and eligibility information. The Program Handbook is periodically revised and re-released in order to reflect relevant CPUC approved changes to the CSI Program rules. In January 2008, the CPUC released an updated CSI Program Handbook, that includes the most up to date rules and eligibility requirements. (The January 2008 version replaces prior versions issued in April and September 2007.)
- ***Application Processing*:** The Program Administrators experienced a significant rise in the number of new applications in the second and third quarters of 2007. (See Program Demand Statistics below.) The spike in residential applications particularly affected PG&E's processing time; however PG&E increased staffing to accommodate the spike in

[4] Proposed changes may require an Advice Letter or a Petition to Modify, depending on the nature of the proposed change.

applications. All Program Administrators have staffed up in the second half of 2007 to meet increased demand.

- ***Program Data and Online Application Tool:*** In August 2007, the CSI Program launched the online CSI Application tool to facilitate online submission and tracking of all CSI applications. In September, the program released program data for the first time from the program application database. Later in 2008, the application database features will be expanded to provide real-time program data to the public.[5]

- ***Shading Calculations that Affect Incentive Levels:*** The CSI Program incentive calculator considers the reduction of solar performance due to shade. Early inspections of installed systems revealed that some installers face challenges providing accurate shading estimates. Program Administrators are revising shading calculation methodologies and providing training to installers later this year to help installers prepare their estimates. The shading calculations may need to be revised again later in 2008 to conform to the CEC's recently released incentive eligibility guidelines. (See below.)

- ***Solar System Installation Inspections*:** The CSI Program requires inspection of most large installations prior to paying the incentive. In order to gauge how the new performance requirements were faring, Program Administrators inspected many systems before moving to sampled inspections (1 in 7) for systems under 30 kW in July. Early inspections resulted in high failure rates, mostly due to minor errors in estimating tilt, orientation, or shading. The Program Administrators realized that minor errors can pass without damaging program effectiveness, and therefore the Program Administrators redeveloped their inspection training protocols. Moreover, the Program Administrators are conducting at least one installer training class per month on key program requirements, tools, and the application process.

- ***Time-of-use (TOU) Rates*:** SB 1 requires all solar incentive recipients to go on TOU rates. An unintended consequence of this legal requirement was that a number of solar customers in desert climates who have high peak demand would have had higher electricity bills after reducing demand with solar than on "flat" electricity rates without solar. On June 6, 2007, the Governor signed AB 1714[6], an emergency bill which delays the TOU requirement until the next general rate case establishes new electricity rates. On June 7, 2007, the CPUC approved D.07-06-014 with the same purpose.

- ***Metering Accuracy and Performance Monitoring Requirements*:** The CSI Program requires that participants meet thorough metering and monitoring requirements to receive incentives. In July, the CPUC approved D.07-07-028 to modify metering requirements by: (1) allowing consumers that participate in the EPBB path to install meters that are accurate within +/- 5%; (2) requiring that all consumers that participate in the PBI need to install meters that are accurate to within +/- 2% of actual system output; (3) clarifying that PBI recipients cannot exempt themselves from Performance Monitoring and Reporting Services (PMRS) requirements, but that all EPBB recipients can be exempt if bid estimates surpass a specified cost cap. The CPUC issued a Proposed Decision on December 19, 2007 in

[5] The online application tool and program data are available from csi.powerclerk.com.
[6] Chapter 11, Statutes of 2007 (AB 1714, Levine)

response to a Petition to Modify (PTM) seeking to remove the requirement that Performance Monitoring and Reporting Service (PMRS) providers be independent third parties. The Proposed Decision would modify the Independence Requirement, set forth in D.06-08-028, to allow non-independent entities to be qualified as PMRS providers. The Proposed Decision also creates a framework for the development of a performance data provider protocol which will be used to validate solar performance data submitted to the Program Administrators as the basis for PBI payments. The CPUC will consider the Proposed Decision at its January 31, 2008 public meeting, and if adopted, it will be integrated into the program thereafter.

- ***Building Integrated Photovoltaics (BIPV):*** Initially, the CSI Program could not allow applicants using BIPV products to apply for the up-front EPBB incentive, because the state could not accurately predict temperature influences on performance. In July, the Commission adopted D.07-08-007 which approves BIPV products for the incentive program based on the fact that the Commission now has satisfactory data to use in modifying the incentive calculator.

- ***Expected Performance Based Buy-down (EPBB) Calculator*:** In early 2007, the CPUC launched the EPBB Calculator for applicants to calculate their expected solar incentive based on system design characteristics. Industry expressed concerns over some of the calculator's reference location (Orange, California), formulas, and methods of calculating shading.[7]

- ***Marketing and Outreach Activities:*** In early 2007, Program Administrators expressed a desire for interim CPUC direction on marketing and outreach. In May, the Commission adopted interim budgets for CSI marketing and outreach in D.06-05-047.
    - In June 2007, the CSI Program Administrators submitted Interim Marketing and Outreach proposals to the CPUC Energy Division with annual budgets of $500,000, focusing on a range of facilitative outreach, including installer trainings, applicant training tools, monthly administrative updates (electronic newsletter), and basic program fact sheets.
    - In September 2007, the CPUC approved the plans, which were then implemented by the Program Administrators for the remainder of the year. In addition to monthly installer trainings and various brochures and fact sheets, an electronic newsletter was launched in October, led by CCSE, and is distributed to the R.06-03-004 service list and all addresses in the CSI PowerClerk database.
    - On December 3, 2007, the Program Administrators submitted Interim Marketing and Outreach plans for 2008, which included monthly installer training and consumer workshops; continued coordination on statewide materials such as an electronic newsletter and a consumer-friendly version of the CSI Program Handbook; bill inserts or other direct mailings; and web enhancements and online multi-media products.

CEC Eligibility Requirements Report (SB1 Report): SB 1 directs the California Energy Commission (Energy Commission) to establish eligibility criteria, conditions for incentives, and rating standards for projects applying for all ratepayer funded incentives for solar energy systems for the CEC, CPUC, and publicly-owned utility portions of the California Solar

[7] The EPBB Calculator is available at www.csi-epbb.com.

Initiative. On December 19th, 2007, the Energy Commission approved *Guidelines for California's Solar Electric Incentive Programs Pursuant to Senate Bill 1*.[8] Minimum program guidelines are in effect as of Jan. 1, 2008, and the CEC report establishes a 12-month transition period before full-compliance with all of the guidelines is required by January 2009. The CPUC CSI Program conforms to the minimum program requirements in Chapter 2 of the CEC Guidelines. The CPUC will work with its Program Administrators throughout the transition period in 2008 to ensure compliance with remainder of the CEC Guidelines by January 2009. The areas that may need to be addressed include the EPBB incentive calculator, the shading calculation methodology, and energy efficiency requirements.

- ***Non-PV Technologies:*** In SB 1, the CPUC is directed to authorize the provision of incentives for either PV or non-PV technologies. In D.06-01-024, the CPUC stated its intent that all solar technologies should qualify for incentives, but at that time there was inadequate information to set eligibility requirements for non-PV technologies. As a result, non-PV technologies have been unable to participate in the CSI Program. In D.06-12-033, the CPUC directed the CSI Program Administrators to work with industry experts to develop a proposal that would establish eligibility requirements for non-PV technologies. Subsequently, the Program Administrators submitted a proposed set of eligibility requirements for non-PV technologies via Advice Letter on June 1, 2007 (PG&E AL 3060-E and SCE 2130-E). After further consultation with the Program Administrators and non-PV industry stakeholders, the CPUC issued Resolution E-4131 on December 20, 2007 to approve the Advice Letter; the Resolution approves eligibility, estimation, and monitoring requirements for non-PV technologies. In the CSI Program Handbook issued on January 11, 2008, the non-PV technologies were incorporated into the program. The CPUC is now working with the Program Administrators to address remaining administrative and implementation issues, and the CPUC expects non-PV technologies to be able to apply for incentives in 2008.

4.1 Major Upcoming CPUC CSI Programmatic Activities

The CPUC will continue implementation of key portions of the CSI Program. These include:

- ***Additional Refinements to Mainstream Incentive Program***: As noted within some of the bullets above, the CSI Program plans the following activities in 2008:
    - **Administrative Streamlining** – The Program Administrators are continually working to identify new opportunities to streamline the CSI Program application process.
    - **Program Handbook** – The CSI Program Handbook will continue to be released on a periodic basis, as new regulatory mandates and CPUC sanctioned changes to the CSI Program are made.

[8] The California Energy Commission report is available at:
http://www.energy.ca.gov/2007publications/CEC-300-2007-012/CEC-300-2007-012-CTF.PDF

- **Program Data** – The CSI database features are currently in development to allow the public access to real-time information for program data. The CPUC staff expects to issue periodic staff reports with updates of program data.
- **CEC SB1 Report** – The CEC's *Guidelines for California's Solar Electric Incentive Programs Pursuant to Senate Bill 1 report* may necessitate changes to current practice within the CSI Program, especially the EPBB incentive calculator, shading and inspection requirements, and energy efficiency requirements. The CPUC will continue to work with the Program Administrators and the CEC to determine what, if any, changes are necessary. Changes will be announced, and likely implemented through inclusion of updates to the CSI Program Handbook.

- **Marketing and Outreach:** In adopting an Interim Marketing and Outreach plan in May 2007, the Commission indicated that it would consider a long-term marketing and outreach plan at a later date. Meanwhile, the Program Administrators each have an annual budget of $500,000 for basic marketing and outreach activities. To develop their needed materials cost-effectively, the Program Administrators are coordinating on many projects, including an electronic newsletter, fact sheets and training materials, and online tools.
- **CSI Program Measurement and Evaluation Plan*:*** CPUC staff is reviewing various proposals for a cost-effectiveness methodology for solar and other distributed generation technologies. After the CPUC adopts a Cost-Effectiveness Methodology applicable to the CSI Program, staff will propose a program Measurement and Evaluation plan.

4.2 Updates on Other Portions of the CPUC CSI Program, outside of the Mainstream Incentive Program

- ***Solar Hot Water Heating Pilot:*** When the CPUC portion of the CSI Program was developed in 2006, the decision was made to fund a small pilot program for solar water heating. The pilot program is being implemented currently by the California Center for Sustainable Energy (CCSE) and incentives are available to SDG&E customers. The pilot program was designed to offer incentives to solar water heating systems that displace both electricity and natural gas powered water heating systems. The goal of the pilot program is to evaluate the cost-effectiveness of solar water heating systems and characterize the solar water heating market in order to determine if a stand-alone statewide program is needed.
    - Through the recently approved non-PV technologies component of the CSI Program, a small sub-set of water heating systems are now eligible for incentives in the mainstream incentive program, but only if they displace electricity. Since the overwhelming majority of water heating systems in California are powered by natural gas, and installation of a solar water system displaces gas but not electricity, most solar water systems are not currently eligible for participation in the non-PV portion of the CSI Program.

- In October 2007, Governor Schwarzenegger signed AB 1470[9] that sets the framework for the creation of a future statewide incentive program for solar water heating systems that displace natural gas, pending the outcome of the current pilot program.
- The pilot program is currently still accepting incentive applications and runs through the end of 2008. A program evaluation contractor is currently working with CCSE and the CPUC to assess the Program, and will prepare an evaluation report that will be used as part of the CPUC's consideration for AB 1470 implementation.

- ***RD&D***: On September 20, 2007, the Commission approved D.07-09-042 to enact a $50 million Research, Development, Deployment and Demonstration (RD&D) solar grant program that will focus predominantly on demonstration projects and grid-integration initiatives. The Commission approved a RD&D Plan that identifies the goals and objectives of the program, sets forth allocation guidelines for the RD&D funds, and establishes criteria for solicitation, selection and funding RD&D projects. It also establishes RD&D program administration and RD&D program evaluation. In January 2008, the CPUC released for comment a draft request for proposal (RFP) for a RD&D Program Manager. The final RFP should be released in early 2008. The CPUC expects to select a RD&D Program Manager in 2008. As detailed in both the decision and the RFP, the Program Manager will establish a schedule and solicit proposals for targeted RD&D grants.

- ***Single Family Low Income Incentive Program*:** In November 2007, the Commission approved D.07-11-045 to implement the CSI Single-Family Low-Income Incentive Program. The program has a budget of $108 million and is expected to run through 2015. Under the CSI Single-Family Low-Income Incentive Program, incentive payments for installed solar photovoltaic systems range from $4.75 to $7.00 per watt for qualifying low-income homeowners, as defined by Public Utilities Code 2852. The program will also provide fully-subsidized 1kW PV systems to qualifying households with incomes of 50% of area median income or less. The CPUC will issue an RFP in early 2008 for a Program Manager to administer the program. Although the framework for the program is approved, the selection and hiring of a Program Manager is a prerequisite before the low-income program can begin to establish the application process for solar incentives.

- ***Multifamily Low Income Incentive Program:*** In July 2007, the CSI Program Administrators submitted a *multifamily* low income housing incentive proposal, which was discussed in a CPUC workshop in August 2007. The Assigned Commissioner and Administrative Law Judge are considering this proposal and staff recommendations. A proposed decision on this program is expected in 2008.

[9] Chapter 536, Statutes of 2007. AB 1470 (2007, Huffman).

5. CPUC CSI Program Demand Statistics

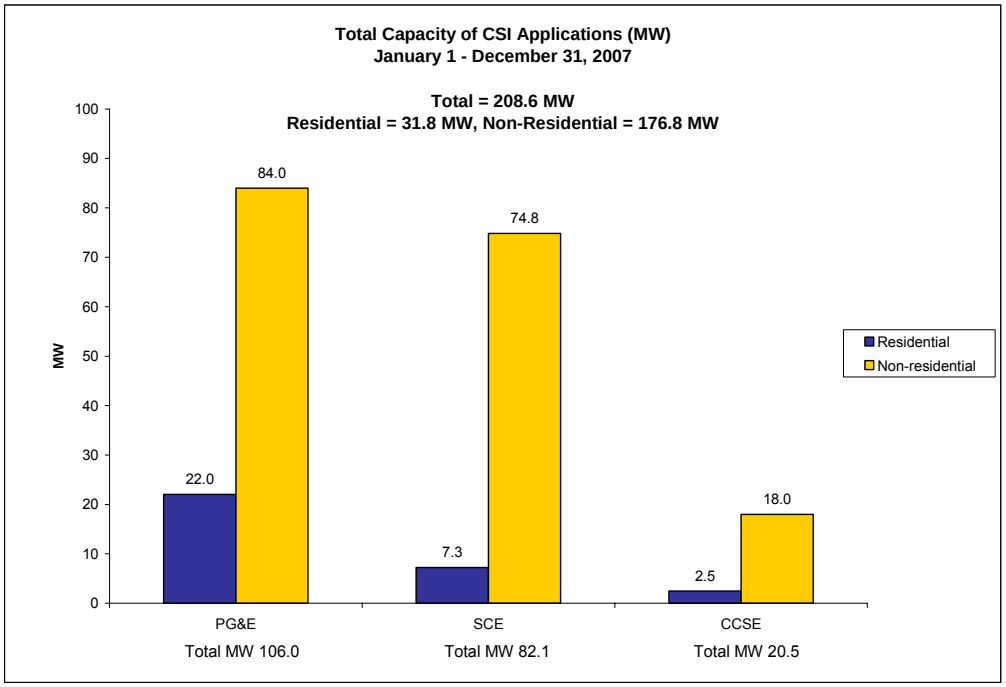
Important Note: This section provides analysis from newly generated data from the program database on January 7, 2008. The data included a few 2008 entries which were ignored for this report. The data has improved significantly since the September 2007 version of the Staff Progress Report, but the data continues to not be complete in all cases. The Program Administrators are continuing to improve the reliability of the information included in the database reports. All references to capacity throughout are CEC-AC rating, not CSI rating which includes an expected performance adjustment for the installation and design of the system, aka design factor.

5.1 Program Participation is Robust

The CSI Program currently has 7,541 applications for 208.6 MW of program demand and $558 million in incentives. An additional 181 applications were received but have been withdrawn or rejected from the program (referred to as drop outs throughout this document).

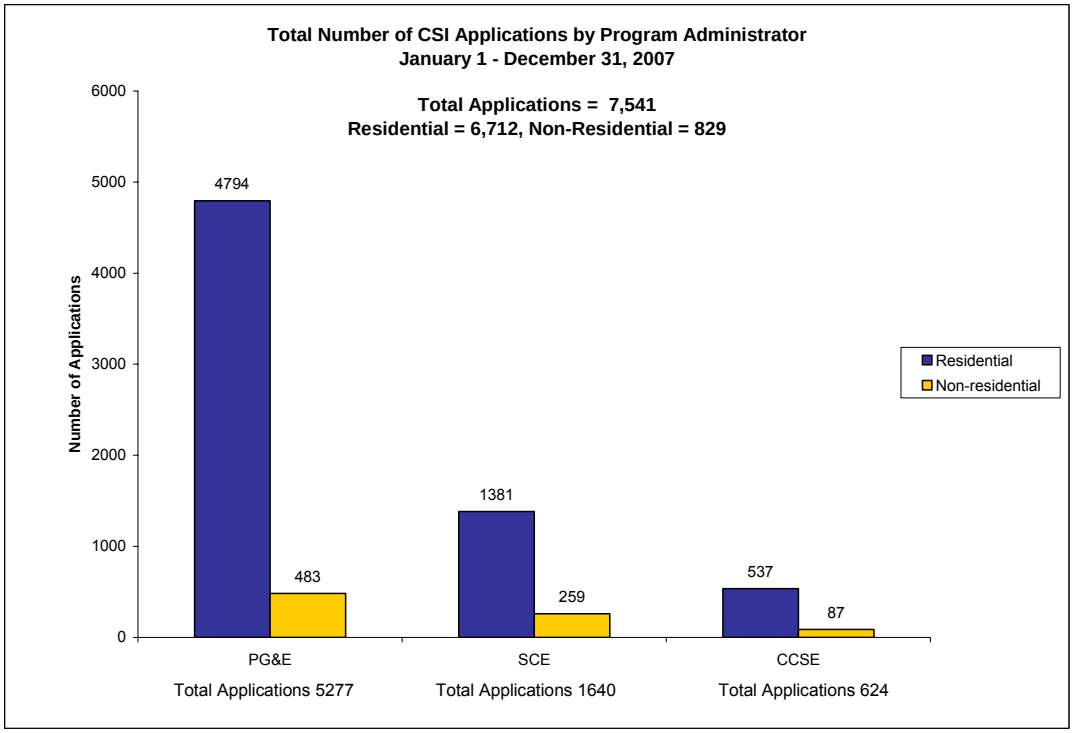
- PG&E's demand in the non-residential sector surpasses all other demand – it had 84.0 MW of demand in 2007, which is only 26 MW less than the total of the SGIP and ERP programs combined (109.9 MW) in 2006. SCE's non-residential demand was not far behind – 74.8 MW, and CCSE had 18.0 MW.
- PG&E's received 4,794 applications in the residential sector – far exceeding SCE's and CCSE's participation in the residential sector.

Figure 3. Total Capacity of CSI Applications, by Program Administrator, January 1-December 31, 2007



Source: CSI PowerClerk Online Database, January 7, 2008. *Note*: Total does not include drop outs (cancelled or removed systems).

Figure 4. Total Number of CSI Applications, by Program Administrator, January 1-December 31, 2007



Source: CSI PowerClerk Online Database, January 7, 2008. *Note*: Total does not include drop outs (cancelled or removed systems).

5. 2 Program Participation Varies by Geography

A closer look at the application requests per program administrator reveals more about the geographic and customer demand patterns, as well as administrative challenges.

Table 4 shows that 89% of the applications are smaller, residential projects (6,712 application requests). However, the fewer non-residential applications -- commercial is 8% of the total and government/non-profit sector is 3% of the total – comprise the bulk of the MWs in the application pool – 176.8 MW (143.4 MW in commercial and 33.4 MW in government/non-profit).

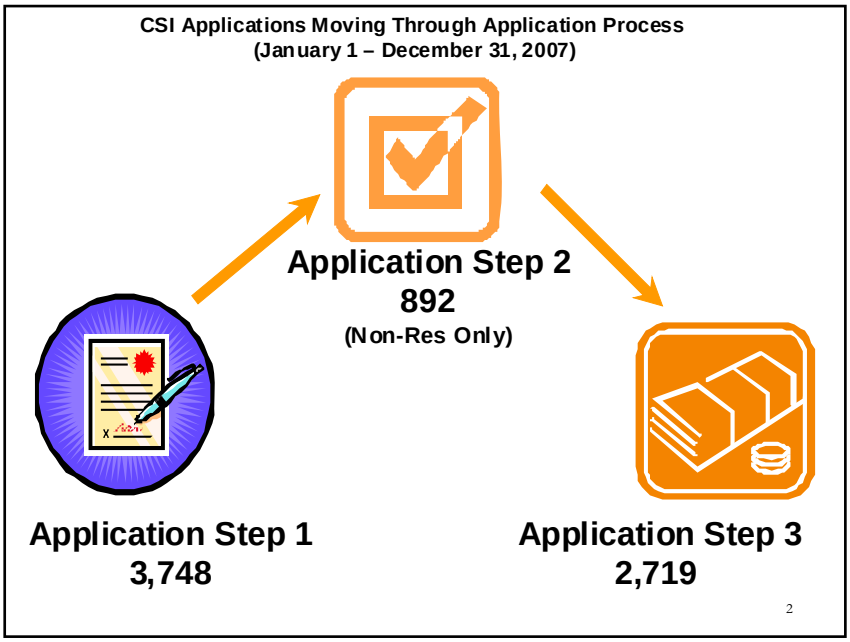
As seen in Table 4, PG&E is managing 70% of the program's applications (only 51% in terms of MWs), due to their large number of residential applications. Although residential applications contain slightly less paperwork and a shorter, two-step application process, reviewing the applications still requires significant administrative time regardless of system size (e.g. Program Administrators report that a 4 kW system can take the same time to process as a 100 kW system.) The volume of applications affected PG&E's review time of applications, see administrative metrics section below.

Table 4. Number of Applications and MW by Customer Type and Administrator

		Program Administrator							
Customer Class	**Data**	**CCSE**		**PG&E**		**SCE**		**Total**	
Residential	# of Applications	537		4794		1381		6,712	
	Applications %	7%		64%		18%		89%	
	MW	2.5	MW	22.0	MW	7.3	MW	31.8	MW
	MW %	1%		11%		3%		15%	
Commercial	# of Applications	61		360		211		632	
	Applications %	1%		5%		3%		8%	
	MW	14.1	MW	65.5	MW	63.8	MW	143.4	MW
	MW %	7%		31%		31%		69%	
Government/ Non-Profit	# of Applications	26		123		48		197	
	Applications %	0.3%		2%		1%		3%	
	MW	3.9	MW	18.5	MW	11.0	MW	33.4	MW
	MW %	2%		9%		5%		16%	
Total # of Applications		**624**		**5,277**		**1,640**		**7,541**	
% of Applications		**8%**		**70%**		**22%**			
Total MW		**20.5**		**106.0**		**82.1**		**208.6**	
% of Total (by Administrator)		**10%**		**51%**		**39%**			

Source: CSI PowerClerk Online Database, January 7, 2008. *Note*: total **does not include** drop outs.

5.3 Projects are Proceeding through CSI Application Steps and Reaching Completion



Applications proceed through several stages before payment - from Requested to Reserved to Completed, as shown in the graphic on the right. Residential and small commercial applicants can apply through an abbreviated two-step application process, whereas larger commercial projects have a second application step -- a milestone review and confirmed reservation stage, in their three-step process before payment. Application Step 3 is triggered when the applicant submits an incentive claim form, signifying that the project is installed and ready for inspection (if applicable), documentation review, and payment. The data below includes all applicants – those with a two-step process as well as those with a three-step process.

As shown in Table 5, the majority of applicants are still in the Application Step 1 or Application Step 2 stage in the CSI application process, although a large number of applicants (yet a small number of MWs) have moved to the Application Step 3.

- There are 3,748 applicants in the first Application Processing Step, which includes 2,948 with confirmed reservations. Those projects with confirmed reservations can now begin installation.
- Another 892 applications are (all non-residential) are in Application processing step 2.
- Once the applicant finishes step 1 (residential) or step 2 if applicable (non-residential), the applicant proceeds with the installation, an inspection if required, and submits the final required paperwork into the Incentive Claim Package.
- There are 2,719 projects in Application processing step 3, which means their Incentive Claim Package has been submitted.
    - Of those submitted, 2,221 projects are "Completed", valued at 11.9 MW and $28 million.
    - An additional 318 projects are "pending payment" or "incentive claim submitted" (which essentially means under review).
- Another 181 solar projects have dropped out of the program (worth 23.7 MW), having been either rejected for ineligibility or withdrawn due to unfavorable economics.

Table 5. CSI Application Status, MW and Payments, January 1-December 31, 2007

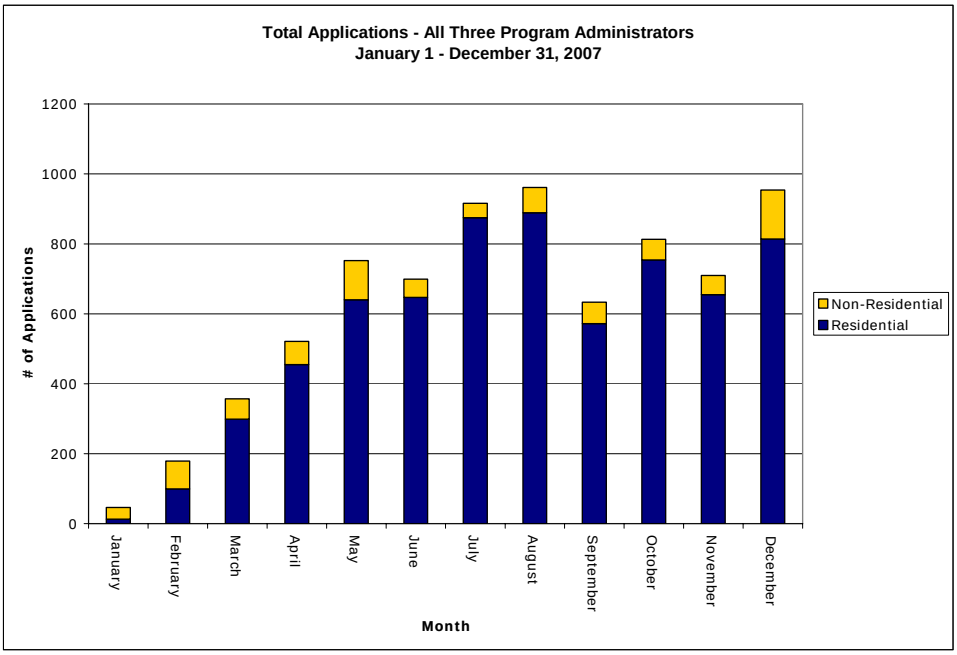
		Number of Applications				Total		Total Incentive	
Handbook Step	**Application Status**	**CCSE**	**PG&E**	**SCE**	**Totals**	**MW**		**$**	
Application Processing Step 1	Reservation Request Review	8	486	165	659	29.1	MW	$	58,252,090
	Reservation Reserved	26	84	31	141	32.5	MW	$	83,146,060
	Confirmed Reservation	253	2118	577	2948	74.4	MW	$	213,661,367
	Total Applications in Step 1	**287**	**2688**	**773**	**3748**	**136.1**	**MW**	**$**	**355,059,518**
Application Processing Step 2 (Only applies to non-residential)	Milestone Review	0	73	12	85	26.2	MW	$	71,987,114
	Pending RFP	2	0	0	2	1.1	MW	$	3,270,675
	Incentive Claim Request Review	11	623	171	805	6.5	MW	$	25,212,188
	Total Applications in Step 2	**13**	**696**	**183**	**892**	**33.9**	**MW**	**$**	**100,469,976**
Application Processing Step 3 (Step 2 for Residential and Small Commercial)	Incentive Claim Submitted	15	147	18	180	3.5	MW	$	9,654,692
	Pending Payment	19	205	94	318	2.6	MW	$	7,286,241
	Completed	272	1537	412	2221	11.9	MW	$	28,758,012
	Total Applications in Step 3	**306**	**1889**	**524**	**2719**	**17.9**	**MW**	**$**	**45,698,946**
	Suspended	18	0	160	178	19.3	MW	$	54,366,625
	Drop Outs	*16*	*104*	*61*	*181*	*23.7*	*MW*	*$*	*63,953,230*
	Total	**640**	**5381**	**1701**	**7722**	**232.3**	**MW**	**$**	**622,159,230**
	Total w/o Drop Outs	**624**	**5277**	**1640**	**7541**	**208.6**	**MW**	**$**	**558,380,388**

Source: CSI PowerClerk Online Database, January 7, 2008.

5.4 Program Demand has been Growing throughout the Year

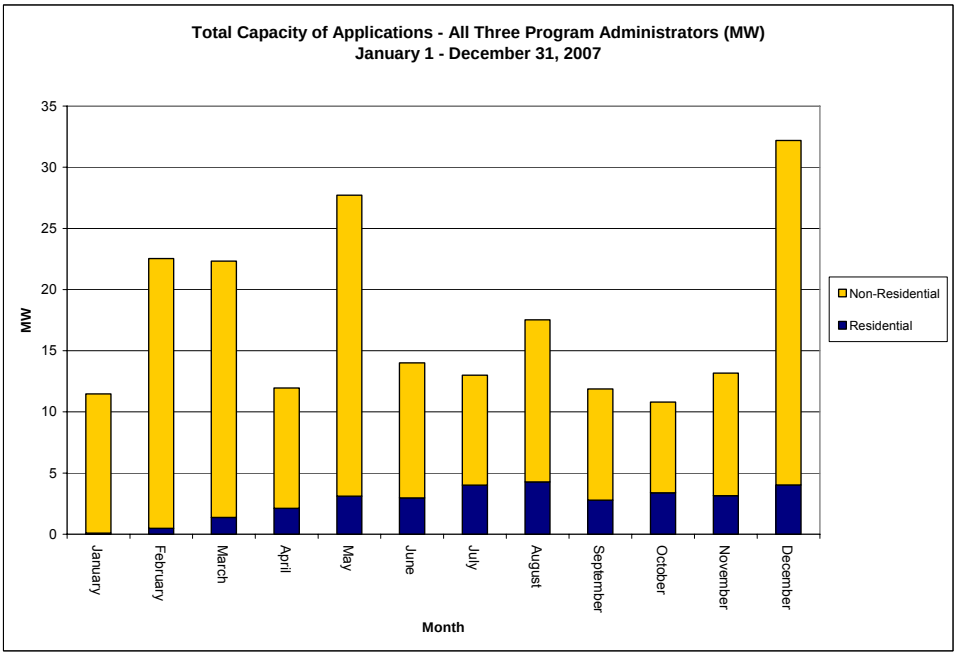
Interest in the CSI Program interest has grown stronger since the beginning of the year. The program began slowly in the first quarter, but demand rose in the second quarter and remained strong for the second half of the year. Figure 3 and Figure 4 provide a month by month view of the total number of applications received in the program. This month-by-month view is not "confirmed reservations", but reservations requested.

Figure 5. Total Applications – By Customer Segment, Jan. 1-Dec. 31, 2007



Source: CSI PowerClerk Online Database, January 7, 2008.

Figure 6. Total Capacity of Applications - By Customer Segment, Jan. 1- Dec. 31, 2007



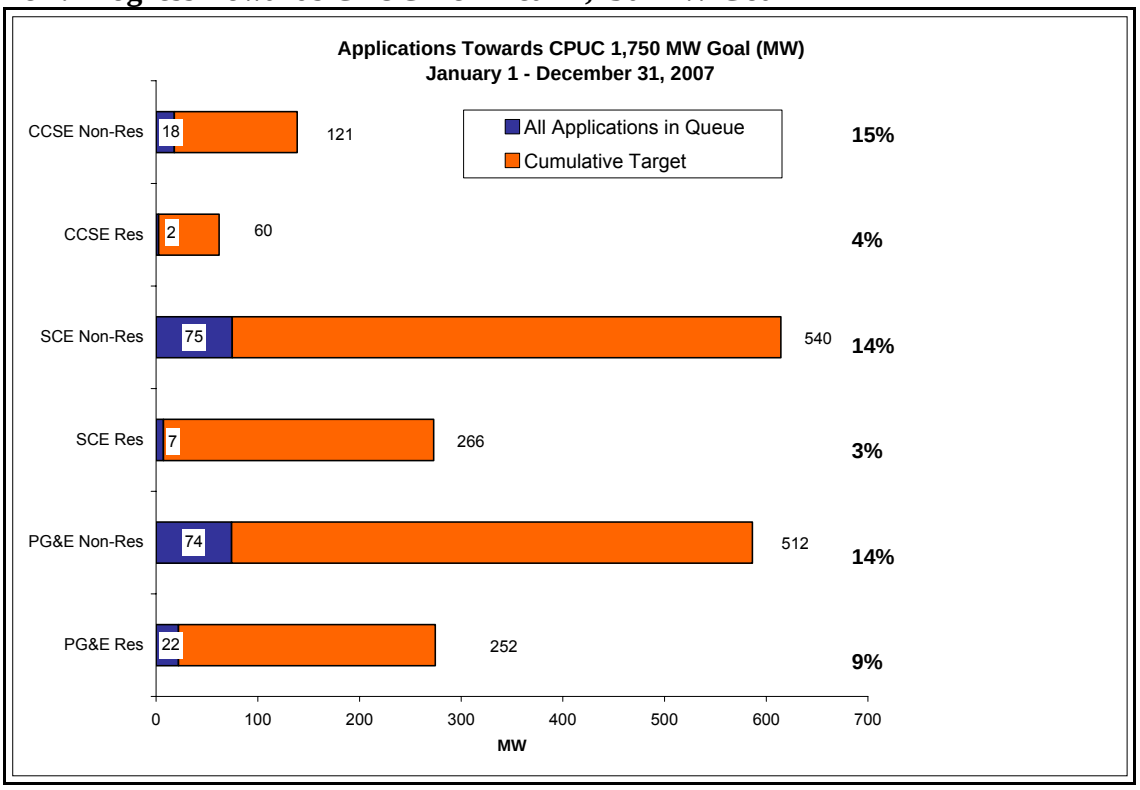
Source: CSI PowerClerk Online Database, January 7, 2008.

5.5 Program Making Progress to Reach Overall CSI Goals

One goal of the CPUC portion of the CSI Program is to grow solar installations to reach 1,750 MW by 2017. With 208 MW worth of reservations, the program would appear to be on track to meet at least 12% of the program's 10 year goal. The CPUC did not adopt annual targets for the CSI Program, as demand is expected to fluctuate as the incentive levels drop and the industry adjusts.

In designing the program, the CPUC divided the goals by program administrator and customer segment. Figure 7 shows the current applications in relation to each of the sub goals. Each Program Administrator is making progress towards its portion of the program's MW goals. Figure 7 shows the goals per Program Administrator per sector (residential or non-residential) that are based on Table 4 above. The non-residential portion of the CPUC goals are about 14-15% underway, whereas the residential portion of the goals are 3-4% underway in CCSE and SCE territory, and 9% underway in PG&E's territory. Figure 7 shows the progress towards the goal based on MWs in applications that are currently in the queue (and does not include drop outs).

Figure 7. Progress Towards CPUC Ten-Year 1,750 MW Goal

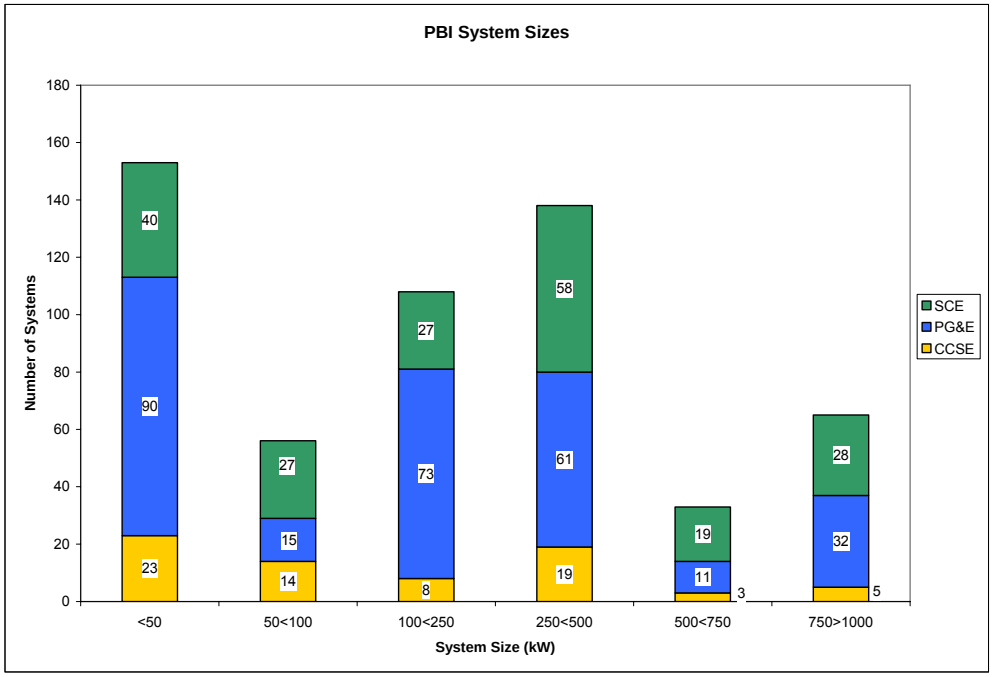


Source: CSI PowerClerk Online Database, January 7, 2008.

5.6 PBI Incentive Demand

The PBI incentive path is required of larger projects in the CSI Program. There are currently 553 PBI projects, that when installed will bring online an estimated 158 MW of new solar. The commercial sector dominates PBI projects, there are 129 MW of commercial projects. The remaining 29 MW of PBI projects are 23 MW of government projects, 5 MW of non-profit projects, and less than 1 MW of residential projects. Figure 8 shows the number of PBI systems by size to show the frequency of medium and large systems in the CSI Program.

Figure 8. Number of PBI Systems by System Size by Program Administrator, January 1 – December 31, 2007



Source: CSI PowerClerk Online Database, January 7, 2008.

Voluntary Opt-In to PBI System

The CPUC is also monitoring the extent to which customers are taking the PBI incentive payment even if they are not required to do so. This information will help inform the planned phase-down of PBI to 30 kW systems by 2010. The PBI incentive was required of all systems 100 kW and greater in 2007, and it is required of all systems 50 kW and above as of 2008. Customers that opt-in to PBI should be sure to understand the costs and rigor of the PBI monitoring and metering requirements. As shown in Table 6, the PBI incentive path is being taken by about 3% of customers that do not need to take PBI. In 2007, there were 209 systems that were under 100 kW that voluntarily opted into the PBI payment system.

Table 6. Systems Below 100 kW that Opt into PBI, January 1- December 31, 2007

System Size	CCSE	PG&E	SCE	Total
<30kW	23	86	37	146
30<50kW	0	4	3	7
50<100kW	14	15	27	56
Total	**37**	**105**	**67**	**209**
# of Systems <100kW	*588*	*5087*	*1499*	*7174*
%of Systems <100kW in PBI	*6.3%*	*2.1%*	*4.5%*	*2.9%*
% of Systems <100kW in EPBB	*93.7%*	*97.9%*	*95.5%*	*97.1%*

Source: CSI PowerClerk Online Database, January 7, 2008.

5.7 Program Administrator's Administrative Processing Time

The CPUC is tracking a number of administrative benchmarks in order to monitor potential Program Administrator performance issues. The key issues include how long is it taking for applications to be processed and payments to be made. All of the data in this section was provided to the CPUC by the Program Administrators.

Reservation Request Review Time

The Program Administrators are striving to take less than 30 days to confirm both residential and non-residential reservation requests. Table 7 below shows application processing time from date the application was received at the Program Administrator, based on the time stamp for paperwork in hand at the Program Administrator[10], to the date application has confirmed reservation. Note that the application processing time is dependent on the Program Administrator reviewing paperwork, as well as the applicant responding to any requests for more information or application corrections. Therefore, Table 7 includes time periods when the Program Administrators contact an applicant to ask for additional information, as well as wait for the response.

The Program Administrators have made progress recently on getting towards their goal of confirmed reservation within 30 days.

- For Residential Applications processed recently:
  - 39% - PG&E, 64% - SCE, 91% - CCSE – were processed in less than 30 days
- For Non-Residential Applications processed recently:
  - 32% - PG&E, 27% - SCE, and 58% - CCSE – were processed in less than 30 days

The applications that take "greater than 60 days" to get from received to reservation can be assumed to have some type of problem. Some of the most frequent types of problems encountered with applications are:

- Listed equipment does not match EPBB print out
- Mailing Address vs. Project Site Address

[10] The date the paperwork is received at the Program Administrator is usually after the Application package is submitted via the online application database Powerclerk.

- Missing signature(s)
- Incomplete or missing documentation

Table 7 compares includes the 2007 data overall, as well as the more recent timeframe of September through November 2007. (December was not included in the data set because so many applications are still pending). The comparison is offered to demonstrate that for the most part, the Program Administrators have addressed paperwork processing backlogs. Across all the Program Administrators, processing time for non-residential is clearly longer than for residential. Each project requires individual attention and "no two projects are alike".

For 2007 overall, PG&E clearly faced challenges in that 39-45% of its applications took greater than 60 days to process. The backlog was driven by high demand in the residential sector. PG&E made progress reducing residential processing times in the later half of the year, and just 10% of residential and 21% of non-residential projects have taken greater than 60 days to reach confirmed reservation or are not yet reserved. In 2008, PG&E has committed to continue to improve this metric and will work with installers to decrease the time for application turnaround.

Table 7. Number of Days Between Application Received and Confirmed Reservation

Percentage of applications whose processing time between "Application Received" and "Confirmed Reservation" is:										
	1-14 days		**15-29 days**		**30-59 days**		**Greater than 60 days**		**Not yet reserved**	
	Sept.-Nov	*2007*	Sept.-Nov	*2007*	Sept.-Nov	*2007*	Sept.-Nov	*2007*	Sept.-Nov.	*2007*
RESIDENTIAL										
PG&E	10%	*5%*	29%	*16%*	51%	*32%*	6%	*45%*	4%	*1%*
SCE	31%	*25%*	33%	*37%*	14%	*21%*	1%	*7%*	21%	*10%*
CCSE	63%	*69%*	28%	*20%*	4%	*6%*	1%	*2%*	4%	*3%*
NON-RESIDENTIAL										
PG&E	5%	*1%*	27%	*21%*	46%	*35%*	17%	*39%*	4%	*4%*
SCE	7%	*30%*	20%	*29%*	27%	*21%*	7%	*11%*	40%	*9%*
CCSE	29%	*35%*	29%	*12%*	29%	*35%*	0%	*8%*	14%	*9%*

Installation Time

The average installation time is determined by the applicant, not by the Program Administrators. Applicants have twelve months from the date of a confirmed reservation to turn in an Incentive Claim Form. Installation times vary according to residential and non-residential projects.

Table 8 below shows the average number of days from the receipt of the reservation incentive form to the installation date. The majority of CSI projects are not yet complete, and so Table FF shows data based only on the projects to date that have reached the incentive claim form stage.

Table 8. Average Number of Days of Installation (Mean Number of Days from Reservation to Incentive Claim Form Received)

	RESIDENTIAL	NONRESIDENTIAL
PG&E	58 days	116 days
SCE	57 days	76 days
CCSE	63 days	107 days

Interconnection Time

The time for interconnections is based upon the date the utility interconnection department deems the application complete (final single line, final building permit, etc.) to performing the interconnection inspection and issuing the permission to operate letter. This time is typically under the utility's control, and not dependent on additional inputs from cities, counties, etc, however exogenous factors such as customer unavailability or adverse weather conditions may impact this. Table 9 identifies the time from interconnect application to authorization to interconnect.

Table 9. Time from interconnect application to authorization to interconnect (in days)

	RESIDENTIAL	NONRESIDENTIAL
PG&E	7	10
SCE	8	26
CCSE	5	5

Incentive Claim Review Time

Table 10 below shows time from Incentive Claim Form received, based on time-stamp of received paperwork received at the Program Administrator[11], to Pending Payment status for applications. The Program Administrators receive the CSI incentive claim form packages and time-stamp date the received application paperwork. Based on the date the Program Administrators receive the paperwork (not necessarily the date the Incentive Claim Form is submitted electronically via Powerclerk), the Program Administrators review the paperwork and perform onsite inspections on a sample of projects. Since scheduling and inspection times vary significantly, Table 10 includes the different lengths of time for residential and non-residential applicants with and without inspections. Included in the time periods in Table 10 are times when the Program Administrators contact an applicant and ask for additional information based on incomplete or errors in an Incentive Claim Form.

The applications that take "greater than 90 days" to get from Incentive Claim Form received to Pending Payment can be assumed to have some type of problem. Some of the most frequent types of problems encountered with applications at the ICF stage are:

- System not interconnected
- Revised EPBB not submitted to reflect changes in installed equipment

[11] The date the paperwork is received at the Program Administrator is usually after the Incentive Claim Form is submitted via the online application database Powerclerk.

- Missing PMRS documentation
- Missing 10 Year warranty for equipment and/or installation
- Incomplete documentation
- Incomplete/No data from or about PDP Provider
- Host Customer unaware of CSI Inspection need

Table 10. Percentage of applications whose processing time between "Incentive Claim Form Received" and "Pending Payment"

Percentage of applications whose processing time between "Incentive Claim Form Received" and "Pending Payment" stage is:										
	1-29 days		30-59 days		60-89 days		Greater than 90 days		Not yet in "Pending Payment" Stage	
	Sept.-Nov	2007	Sept.-Nov	2007	2007	Sept.-Nov	Sept.-Nov	2007	Sept.-Nov	2007
RESIDENTIAL with inspection										
PG&E	8%	6%	65%	63%	19%	23%	0%	4%	8%	4%
SCE	41%	53%	45%	33%	4%	7%	0%	5%	9%	3%
CCSE	50%	35%	19%	25%	13%	17%	0%	6%	19%	17%
RESIDENTIAL without inspection										
PG&E	44%	48%	33%	33%	5%	6%	0%	1%	18%	12%
SCE	51%	44%	14%	17%	3%	9%	0%	5%	32%	25%
CCSE	82%	62%	6%	21%	1%	5%	0%	2%	11%	10%
NON-RESIDENTIAL with inspection										
PG&E	17%	10%	67%	50%	17%	30%	0%	0%	0%	10%
SCE	0%	50%	0%	50%	0%	0%	0%	0%	0%	0%
CCSE	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%
NON-RESIDENTIAL without inspection										
PG&E	50%	53%	16%	18%	9%	11%	0%	0%	25%	18%
SCE	42%	32%	0%	9%	0%	22%	0%	0%	58%	36%
CCSE	100%	67%	0%	0%	0%	0%	0%	33%	0%	0%

Payment Time

Once an Incentive Claim Form package has been reviewed and approved, including the complete inspection if applicable, the applicant is ready for payment. The time from Pending Payment to Completed status reflects the amount of time it takes for the payment to be made to the applicant. Again, the timeframes vary based on residential and non-residential, but they also vary depending on whether the project is receiving an EPBB incentive or a PBI incentive. Table 11 shows the average number of days from Pending Payment status to Completed status, for both EPBB and PBI incentives.

Table 11. Average Number of Days from Pending Payment to Completed (Mean Number of Days from ICF Approved to Payment Made

	Residential		Non-Residential	
	EPBB	**PBI**	**EPBB**	**PBI**
PG&E	6	30	8	NA
SCE	34	0	37	0
CCSE	14	63	15	21**

* PBI Payments based on the sample size of only **1 project** payment paid

* * There is only 1 Non-Res PBI payment CCSE is making. Because of the initial long delay in implementing the first PBI project, CCSE paid several months at one time back to the original Interconnection Date and thus did not have to wait the customary 30 days for production data.

According to CCSE, PBI payment timelines often have a built in 30 day delay from date project is approved (Pending Payment) until the first receipt of a full month of production data. Upon receipt of the production data, the Project Administrators have 30 days to complete the payment. Therefore, 60 days from Pending Payment to First Payment is fairly typical. In several cases, CCSE has not received production data until 60+ days after the project was approved. CCSE has put in requirements to improve the responsiveness of PDP/PMRS providers.

For PG&E, the check for EPBB payments is initiated when a customer submits complete documentation on his/her Incentive Claim and the inspection has been completed and report provided (if selected for an inspection). PBI applications are approved when a customer submits complete documentation on his/her Incentive Claim and the inspection has been completed and report provided (if selected for an inspection). However, PBI payments are not initiated until the generation data has been submitted to the Program Administrators for payment.

5.8 Installer Trainings

The CSI Program held 67 trainings during 2007 that trained at least 2,942 attendees. Each Program Administrators offered numerous trainings throughout the year, and these trainings provide an opportunity to train installers on the CSI application process. Table 12 shows the number of trainings held per Program Administrator.

Table 12. Number of CSI Trainings

	Number of CSI Trainings Held in 2007	Number of Attendees at Installer Trainings in 2007
PG&E	29	1,882
SCE	26	376
CCSE	12	684
Total	**67**	**2,942**

5.8 Program Drop Outs

As the CSI Program has progressed, some systems have either dropped out or decreased in overall size (MW). As per Commission decision D.07-05-007, these "dropout" MWs are added in at the current step when they drop out. This creates a dollar differential between the incentive

level when the MW were reserved and the incentive level when the MW drop out and are added back into the program at a new step. Table 13, Table 14, and Table 15 below show the flow of dropout MW and incentive dollars through the program, by program administrator.

"MW Dropout" represents the number of MW that dropped out *from that step*, at any time. The MW may have been added back into the same step or a higher step. If the MW is added back into the same step, it is not shown in the Tables below. Step 1 represents the transition year of 2006, where solar funds were managed under SGIP. As per Commission decision D.06-12-033, any funds for solar projects under SGIP that were collected from electric ratepayers and remained at the end of 2006 were to be rolled over into the CSI Program.

Table 13. CCSE Dropout Data

Step	MW Originally Allocated	Incentive $ Reserved	Total MW Dropout to date**	Incentive $ Left Unreserved from Dropouts	MW added to Step 1	MW added to Step 2	MW added to Step 3	MW added to Step 4
Residential								
1	N/A	N/A	N/A	N/A		N/A	N/A	
2	2.40	$6,009,000	0	0			0	
3	3.40	$169,000	0	0				
Non-Residential (Commercial and Government)								
1	6.42	$17,997,302	5.39	$1,108,188		5.30	0.09	0
2	4.80	$29,914,664	0.09	$25,951			0.09	0
3	6.90	$21,202,024	0.23	$69,000				0.23
4	9.00	$2,904,214	0	0				
Total Unreserved				*$1,203,139*				

Table 14. PG&E Dropout Data

Step	MW Originally Allocated	Incentive $ Reserved	Total MW Dropout to date**	Incentive $ Left Unreserved from Dropouts	MW added to Step 1	MW added to Step 2	MW added to Step 3	MW added to Step 4
Residential								
1	-	-	2.590	$776,927		2.590		
2	10.1	$25,250,000	0.047	$13,992			0.047	
3	14.4	$31,680,000						
Non-Residential (Commercial and Government)								
1	27.8	$77,840,000	13.565	$4,356,026		12.882	0.410	0.273
2	20.5	$51,250,000	11.171	$5,463,971			4.129	7.042
3	29.3	$64,460,000	3.795	$1,138,569				3.795
4	38.1	$72,390,000						
5	46.8	$72,540,000						
Total Unreserved				*$11,749,485*				

The dropout in step 1 came from SGIP projects of which some was allocated to residential step 2.

Table 15. SCE Dropout Data

Step	MW Originally	Incentive $ Reserved	Total MW	Incentive $ Left Unreserved	MW added	MW added	MW added	MW added

	Allocated		Dropout to date**	from Dropouts	to Step 1	to Step 2	to Step 3	to Step 4
Residential								
1	0.07	$0	0.07	$182,568		0.07		
2	10.6	$15,618,772	0.10	$186,765			0.05	
Non-Residential (Commercial and Government)								
1	12.39	$34,712,977	6.94	$14,202,589		4.78	0.51	1.65
2	21.6	$74,503,162	3.41	$8,525,243				
3	30.8	$103,738,003	1.05	$2,850,548				
4	40.1	$53,668,124	1.04	$2,379,568				1.05
Total Unreserved				*$28,327,280*				

5.8 SGIP Funds Rolled Over into CSI

Additionally, excess funds dedicated to solar projects under SGIP were directed to roll over into CSI at the beginning of the program. The following chart identifies the amount of funds rolled over into CSI from SGIP in 2007. In the next progress report, the staff hopes to analyze the number of projects that have dropped out from the SGIP rollover; however, we do not expect that there will be any additional MWs or dollars added into the CSI Program from SGIP-rollover drop-outs.

Table 16. SGIP Funds Rolled Over into CSI

Program Administrator	Rollover Funds (in $millions)
PG&E	$53.0
SCE	$97.0
CCSE	$9.5
Total	*$159.5*

5.9 CSI Program Demand Comparison to Prior Programs

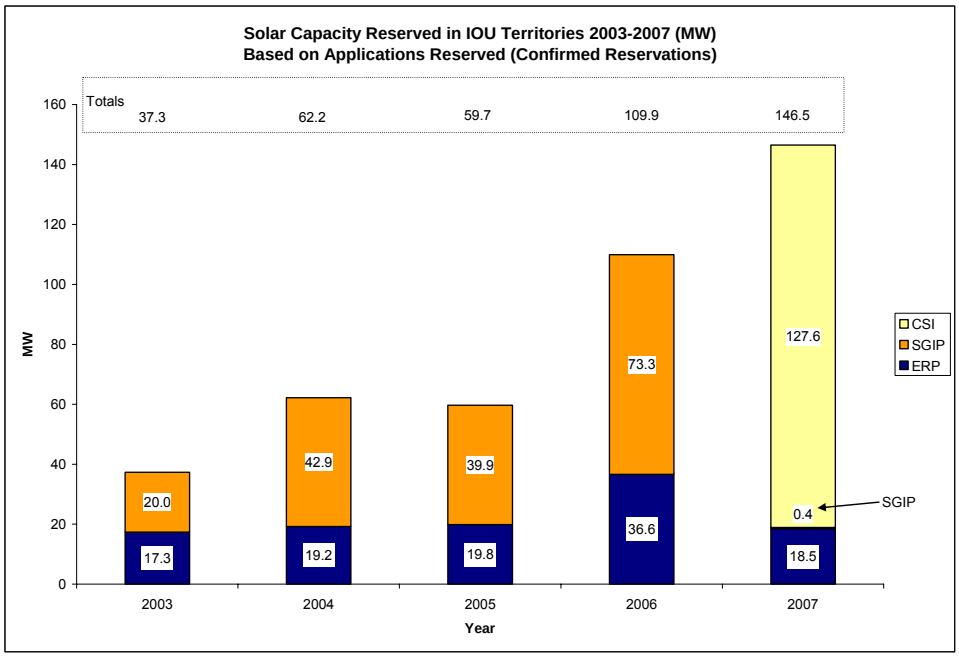
The CPUC is interested in monitoring the comparison of the CSI Program with the programs that it replaced. In terms of solar capacity, demand for the program is surpassing that of earlier rebate programs, despite the transition to performance-based incentives and the new application process.

In the September 2007 Staff Progress Report, we looked at the number of applications received by year by program. In this report, we compared the confirmed reservations by year by program. Since the CEC's ERP program received over 3,000 applications in the closing weeks of 2006, many of the ERP program reservations were confirmed in 2007.

As shown in Figure 9, there were applications confirmed for 109.9 MW of solar in 2006 in the ERP and SGIP programs. In 2007, there were applications confirmed for 146.5 MW of solar

capacity in the ERP and CSI programs. (Note: in earlier sections the CSI Program noted receiving 208 MW of applications in 2007, but only 127.6 have confirmed reservations.) Figure 9 and Figure 10 do not include applications reserved under the CEC's NSHP program in 2007, but we hope to include that data in future reports.

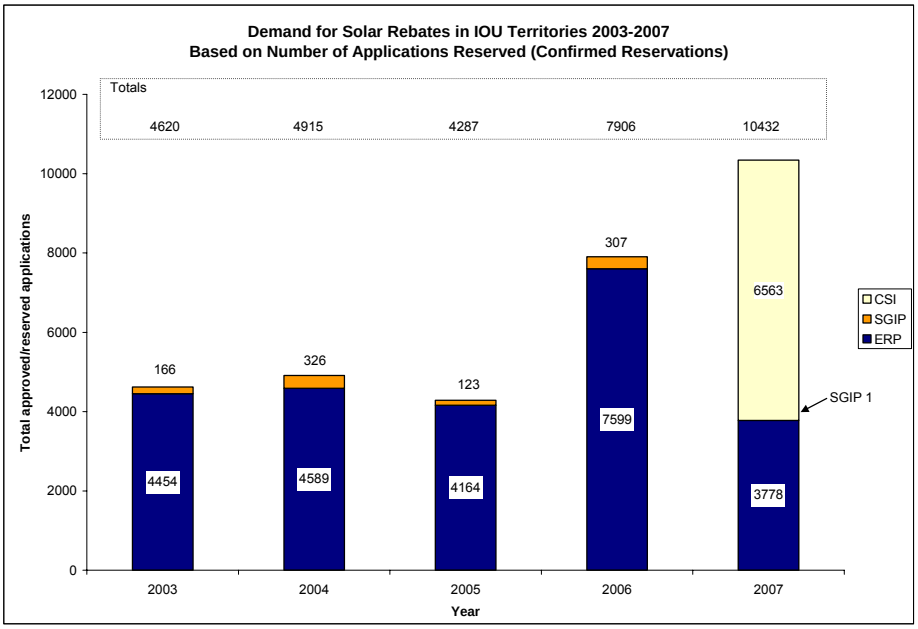
Figure 9. Solar Capacity in IOU Territories, 2003-2007



Sources: CEC ERP database through January 7, 2008. CPUC SGIP database through October 2007. CSI PowerClerk Online Database through January 7, 2008.
Notes: Data represents all applications approved in ERP and all reservations confirmed in CSI/SGIP. This differs from the September report which includes all applications *received* in ERP/CSI/SGIP. The CSI data excludes applications in the Reservations Reserved, and Reservations Request Review status.
ERP data includes residential applications for existing and new properties. CSI data includes residential applications for existing properties only.

In terms of the number of applications confirmed, there were 7,906 applications confirmed in 2006 in the ERP and SGIP programs. In 2007, there were 10,342 applications confirmed in the ERP and CSI programs. The CEC's NSHP program in 2007 is not included in the data, but there were applications approved in that program as well. The staff hopes to include the NSHP data in future reports.

Figure 10. Demand for Solar Rebates in IOU Territories 2003-2007



Sources: CEC ERP database through January 7, 2008. CPUC SGIP database through October 2007. CSI PowerClerk Online Database through January 7, 2008.
Note: Data represents all applications approved in ERP and all reservations confirmed in CSI/SGIP. This differs from the September report which includes all applications *received* in ERP/CSI/SGIP.

5.7 CSI Program's Under 10 kW Demand Tracks ERP's 2006 Demand for Projects Under 10 kW

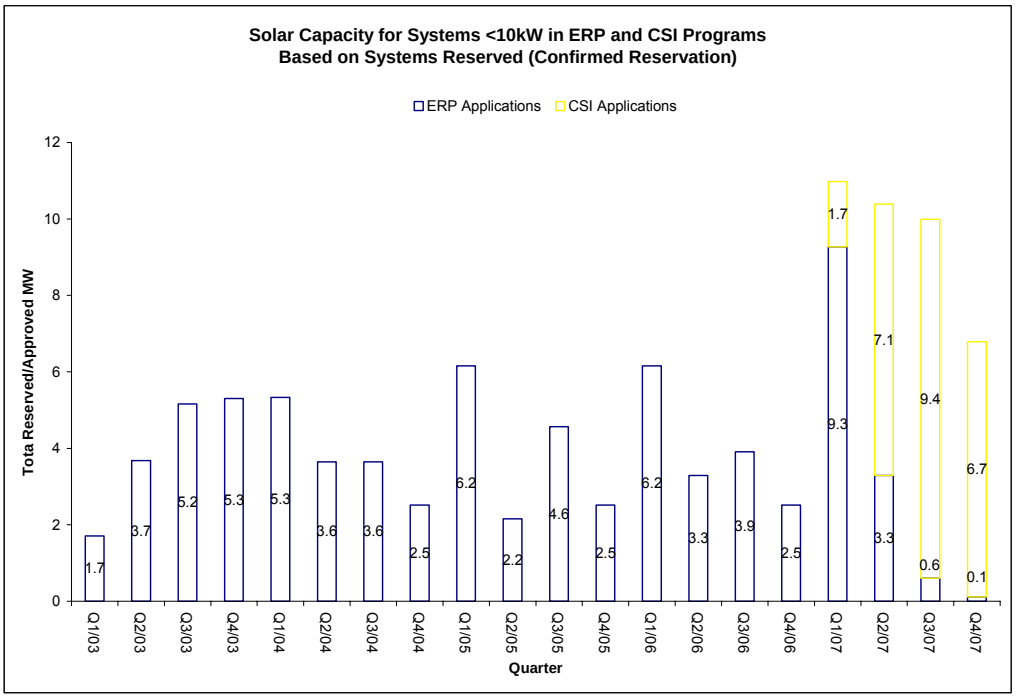
The previous section looked at the difference in overall demand between the CSI and previous programs. The CPUC is also monitoring the demand for incentives by sector. For the under 10 kW sector, which is primarily residential, the CPUC has looked at quarter by quarter comparisons of the under 10 kW portion of the CSI Program and the under 10 kW portion of the ERP program.

It is important to remember that the ERP program funded both residential and small commercial installations under 30 kW. The CEC's program did not categorize applications by residential versus non-residential systems. Therefore, in the analysis below, we compare applications under 10 kW from both programs. There is some small commercial in this sector, but it is largely residential.

As noted above, the closing weeks of 2006 brought in over 3000 applications to the CEC's ERP program. It took well into the second quarter of 2007 for the ERP program to issue confirmed reservations for all of the late 2006 applicants. Meanwhile, CSI applications with confirmed reservations started out slow in the first quarter and rose in the second and third quarters. During the second and third quarters PG&E was processing a large backlog of residential applications. There was a drop off in processed reservations in the fourth quarter of 2007.

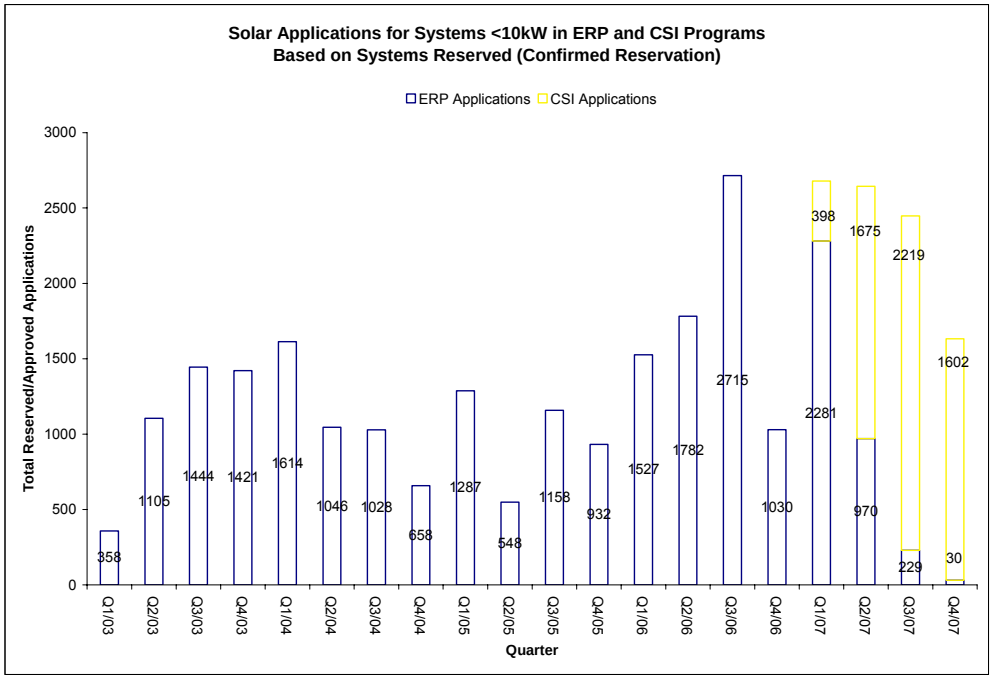
Figure 11 shows that solar capacity reserved in the under 10 kW project segment rose significantly in Q1 2007, most of which was in the CEC's ERP program. However, the CSI Program demand grew in the second quarter and demand under the CSI Program in Q3 2007 was stronger than even the ERP's Q1 ERP.

Figure 11. Solar Capacity of Applications <10kW, 2003-2007, by Quarter



Sources: CEC ERP database through January 7, 2008. CPUC SGIP database through October 2007. CSI PowerClerk Online Database through January 7, 2008.
Notes: Data represents all applications approved in ERP and all reservations confirmed in CSI/SGIP. This differs from the September report which includes all applications *received* in ERP/CSI/SGIP. The CSI data excludes applications in the Reservations Reserved, and Reservations Request Review status.
ERP data includes residential applications for existing and new properties. CSI data includes residential applications for existing properties only.

Figure 12. Solar Applications <10kW, 2003-2007, by Quarter



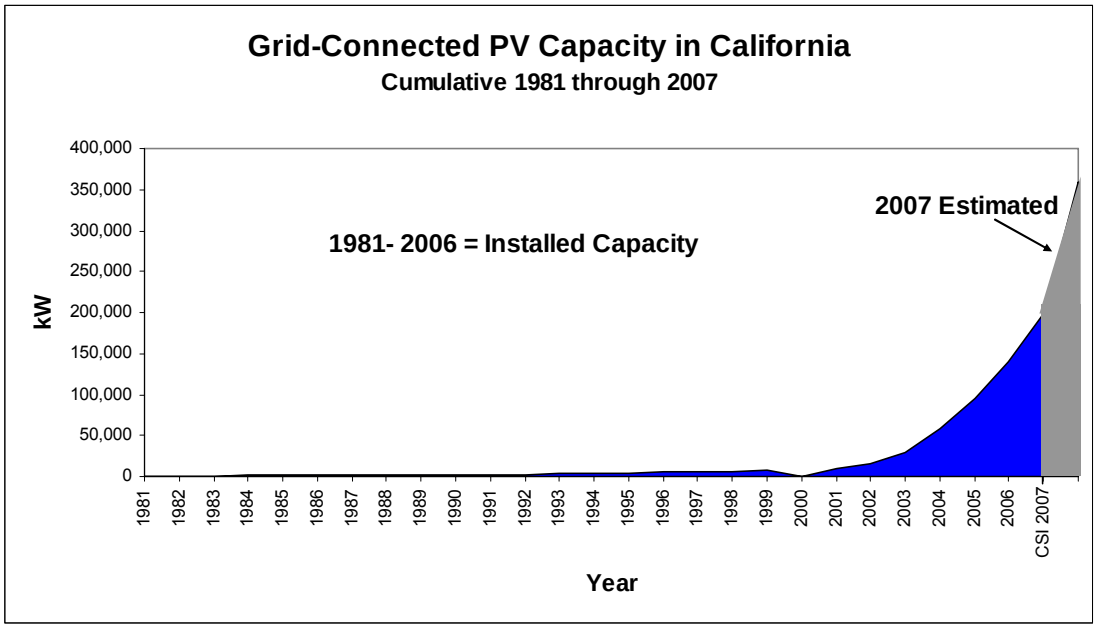
Sources: CEC ERP database through January 7, 2008. CPUC SGIP database through October 2007. CSI PowerClerk Online Database through January 7, 2008.
Notes: Data represents all applications approved in ERP and all reservations confirmed in CSI/SGIP. This differs from the September report which includes all applications *received* in ERP/CSI/SGIP. The CSI data excludes applications in the Reservations Reserved, and Reservations Request Review status.
ERP data includes residential applications for existing and new properties. CSI data includes residential applications for existing properties only.

5.8 CSI is on Track to Exceed the Impact of Earlier Programs

The ultimate metric for the CSI Program will be the amount of installed MW of new grid connected solar in California. Because the program is only a year old, the data discussed in this progress report focuses primarily on the capacity of applications to date, rather than on installed MWs. The CPUC will be closely monitoring the actual installations and eventually doing a thorough review of the annual growth under CSI.

The California Energy Commission tracks installed MW of grid connected PV since 1981. The most recent version of the database was published in April 2007, and Figure 13 shows the MW of grid-connected PV systems since 1981 with a 2007 "estimate" bar based on the CSI Program's expected impact.

Figure 13. Grid-Connected PV Capacity in California, Cumulative 1981 through 2006, 2007 Estimated

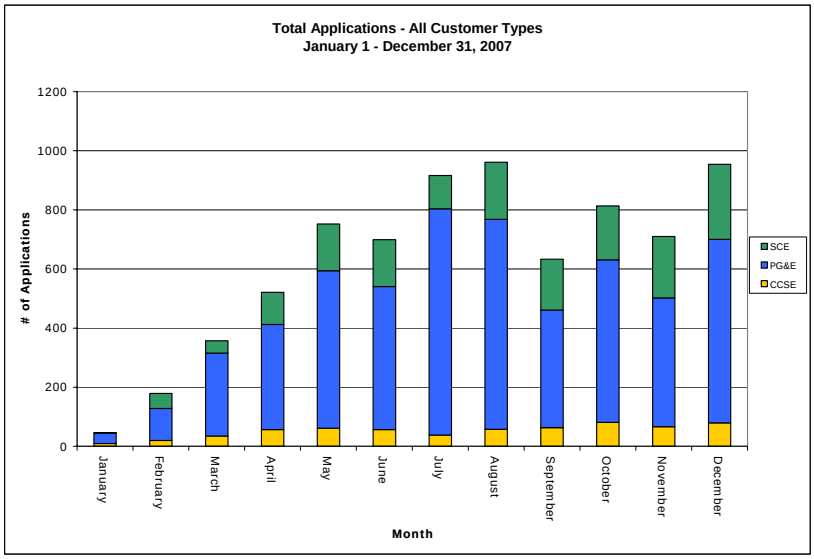


Source: 1981-2006 data from California Energy Commission's *Grid Connected PV Capacity Installed in California*, April 18, 2007. 2007 data is not statewide, only CPUC-CSI data in IOU territories. 2007 data is estimated capacity expected to be installed based on applications received through September 18, 2007

Appendix

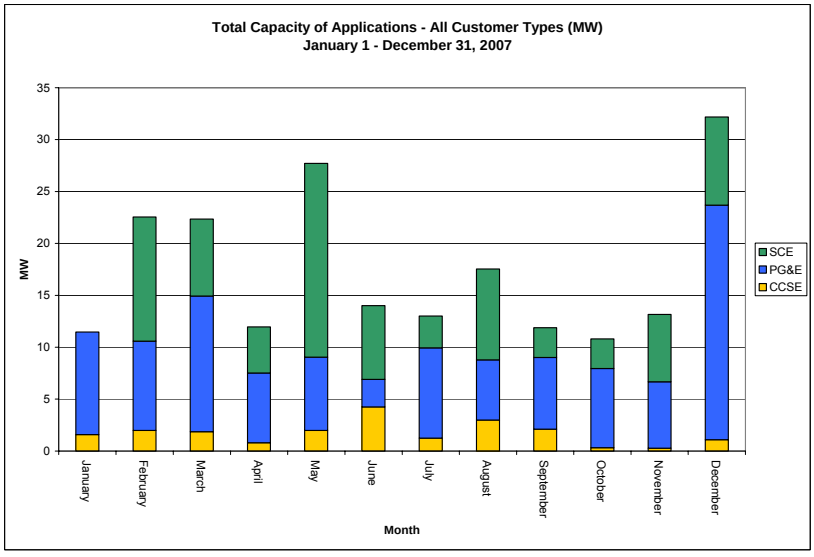
Additional data graphs of CSI Program demand by month and by Program Administrator are provided in the Appendix.

Figure 14. Total Applications – By Program Administrator, Jan. 1-Dec. 31, 2007



Source: CSI PowerClerk Online Database, January 7, 2008.

Figure 15. Total Capacity of Applications – By Program Administrator, Jan. 1-Dec. 31, 2007



Source: CSI PowerClerk Online Database, January 7, 2008.

Figure 16. Total Applications-PG&E, Jan. 1-Dec. 31, 2007[12]

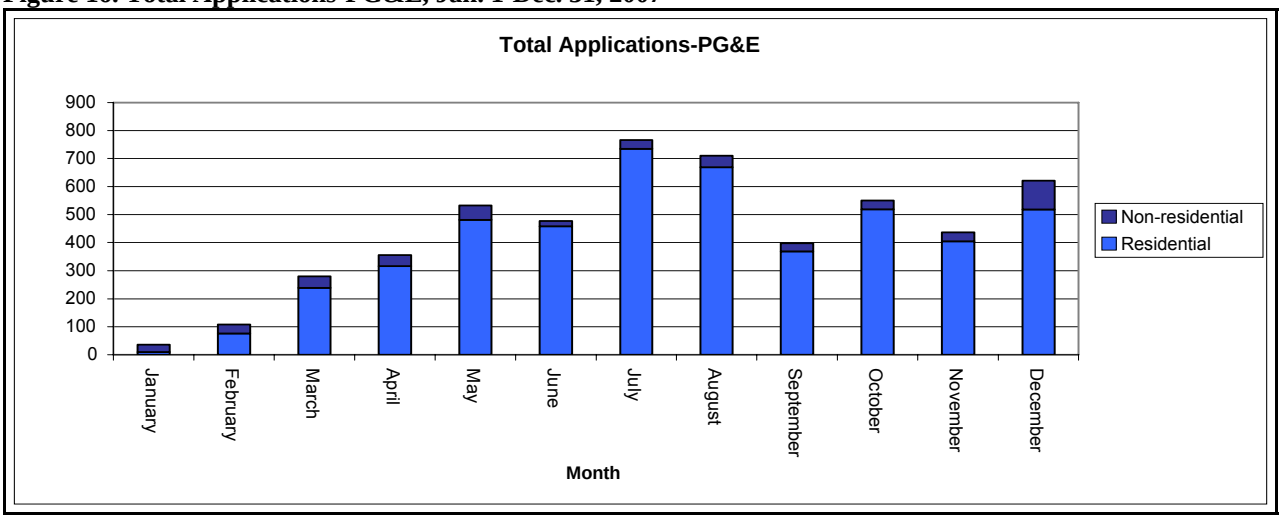


Figure 17. Total Capacity of Applications- PG&E, Jan. 1-Dec. 31, 2007

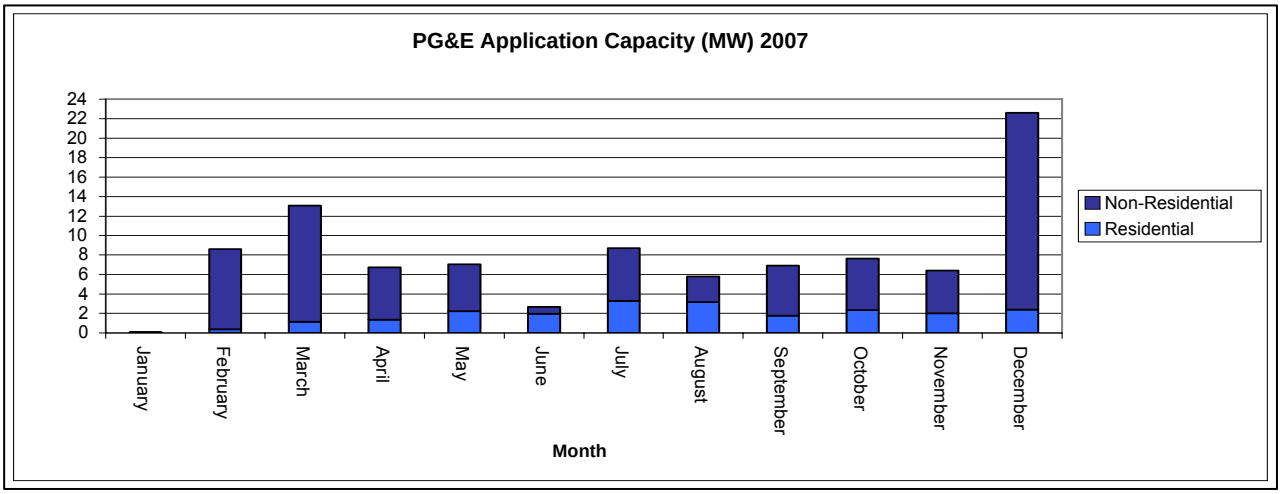
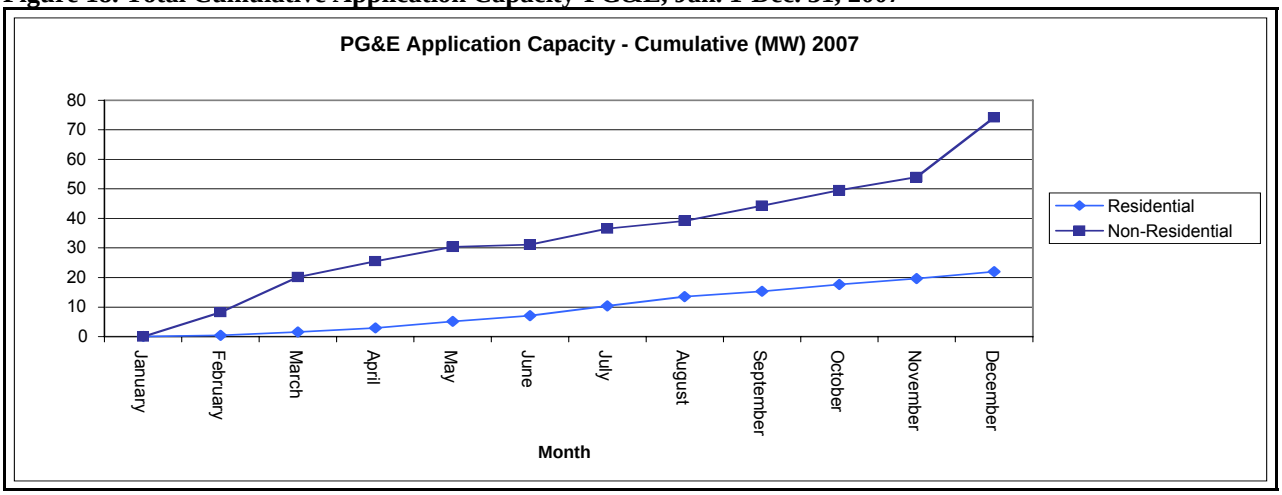


Figure 18. Total Cumulative Application Capacity-PG&E, Jan. 1-Dec. 31, 2007



[12] Sources for Figure 16 through 24 are the CSI PowerClerk Online Database, January 7, 2008.

Figure 19. Total Applications-SCE, Jan. 1-Dec. 31, 2007

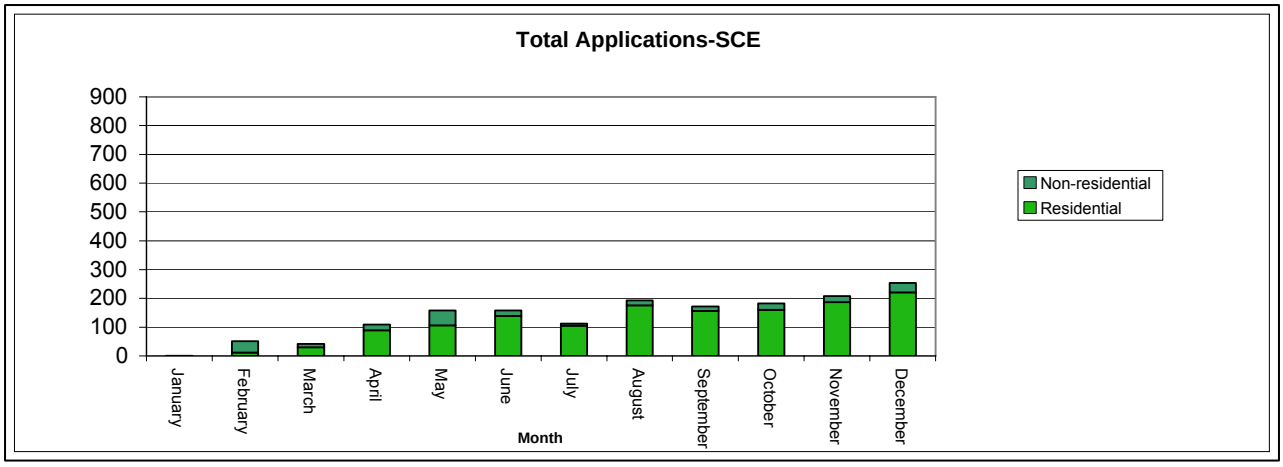


Figure 20. Total Capacity of Applications-SCE, Jan. 1-Dec. 31, 2007

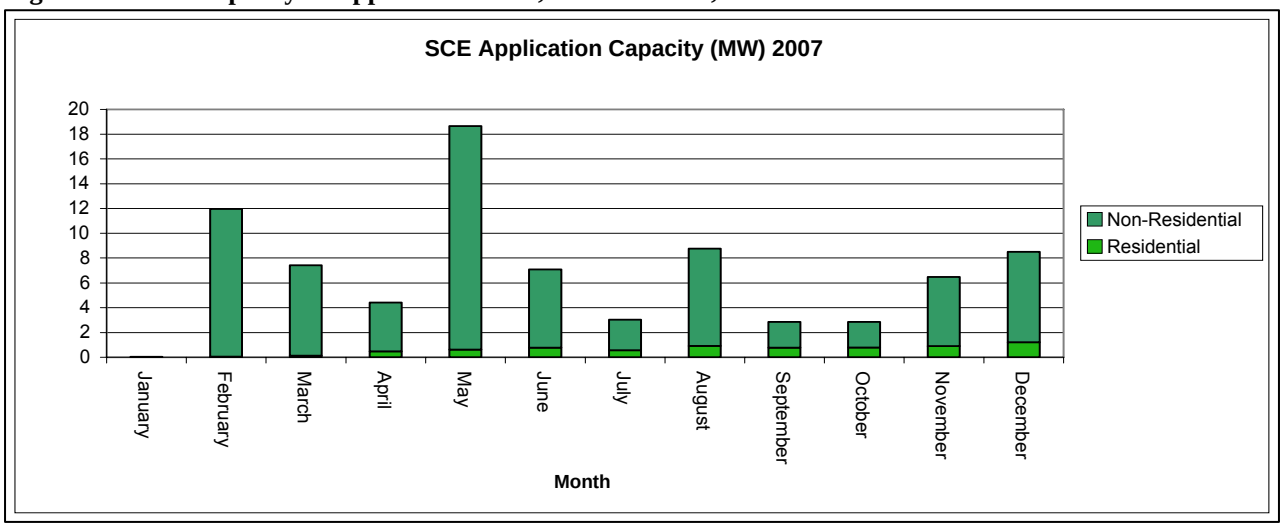


Figure 21. Total Cumulative Applications-SCE, Jan. 1-Dec. 31, 2007

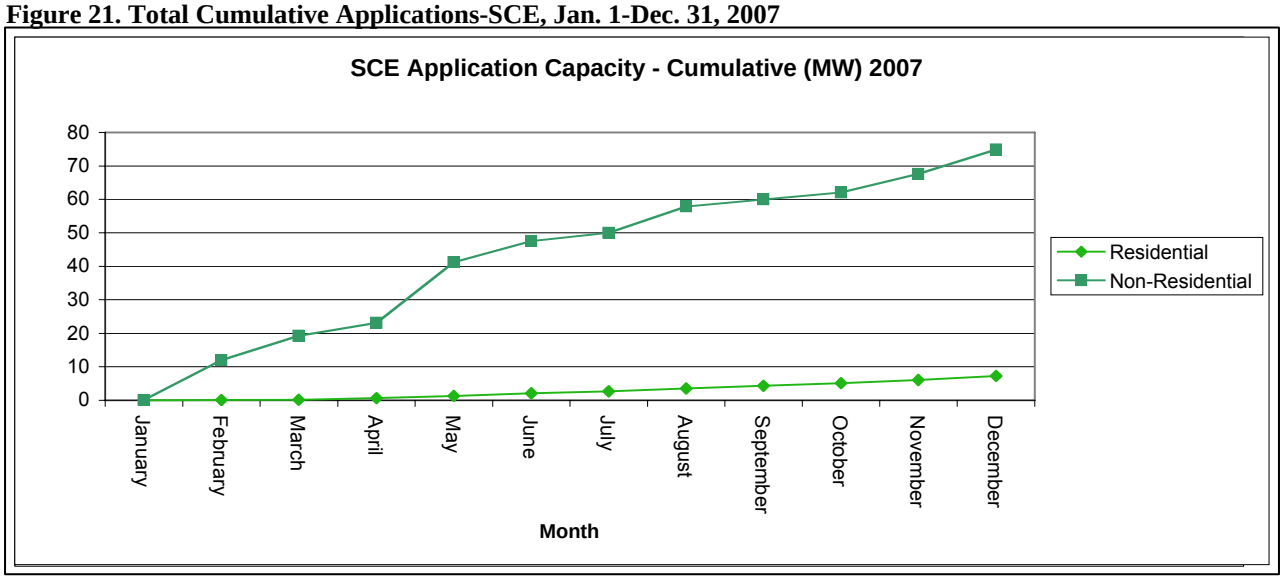


Figure 22. Total Applications-CCSE, Jan. 1-Dec. 31, 2007

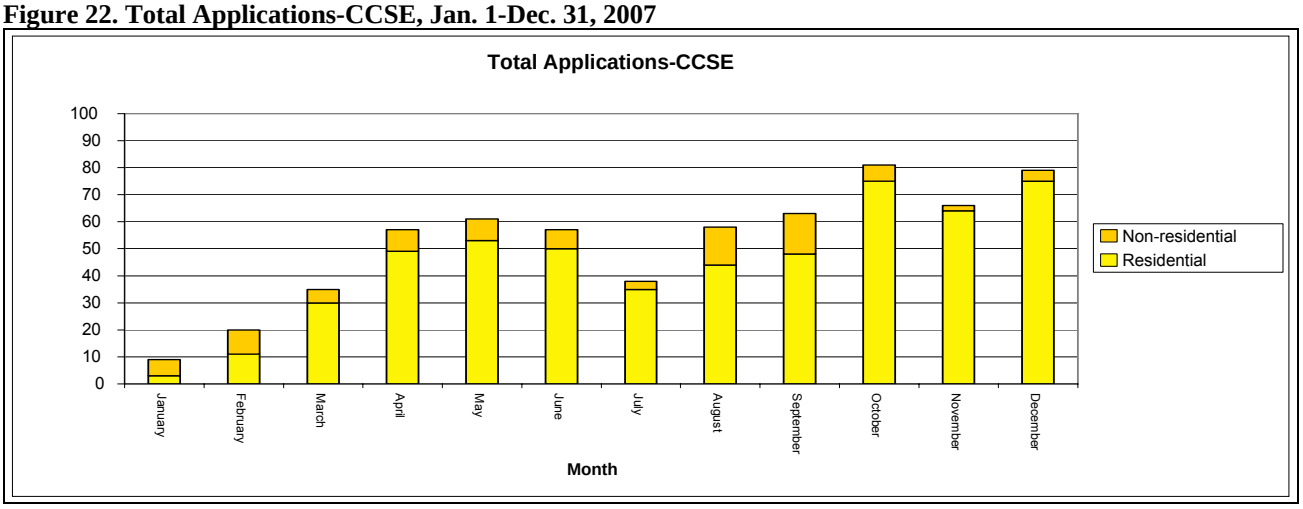


Figure 23. Total Applications by Capacity- CCSE, Jan. 1-Dec. 31, 2007

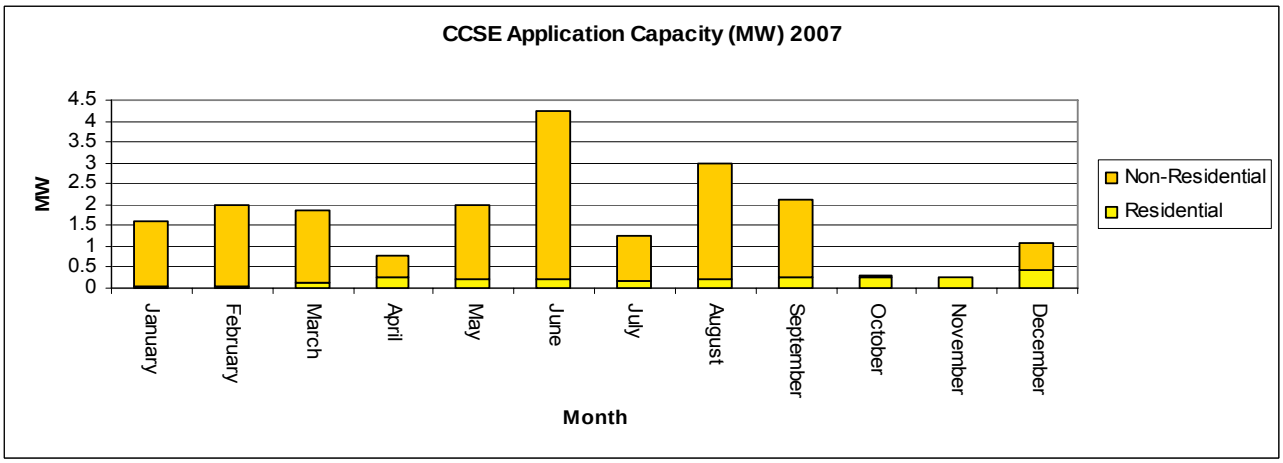
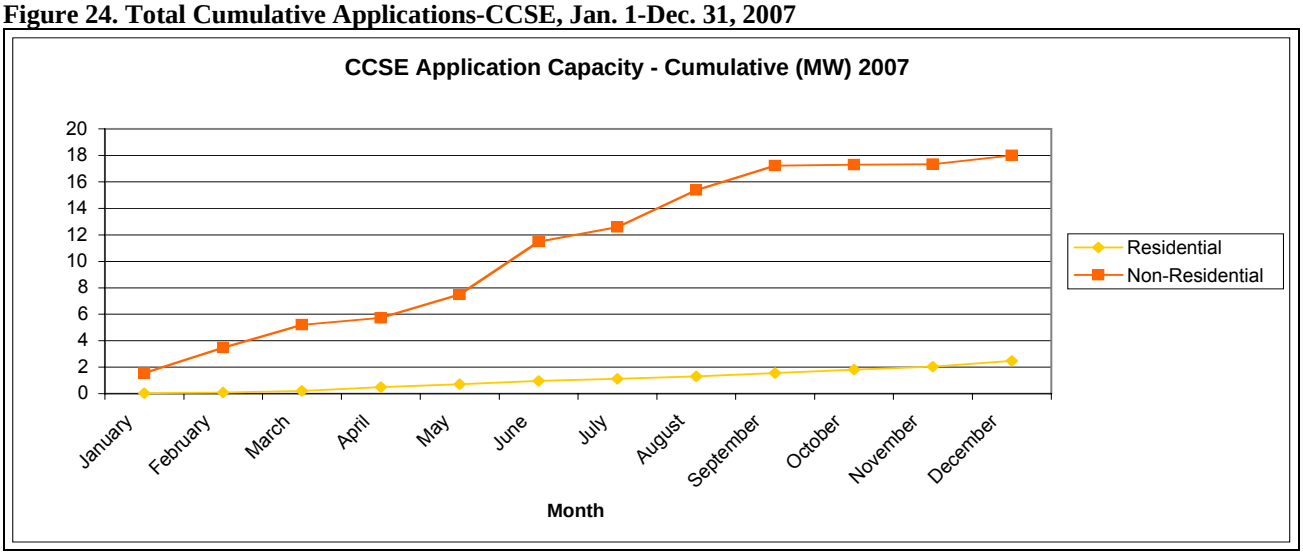


Figure 24. Total Cumulative Applications-CCSE, Jan. 1-Dec. 31, 2007



California Solar Initiative Contact Information

For consumer information about the California Solar Initiative, visit:
www.gosolarcalifornia.ca.gov

To contact your Program Administrator, visit:

PG&E Customers:	www.pge.com/solar
SCE Customers:	www.sce.com/rebatesandsavings/CaliforniaSolarInitiative/
SDGE& Customers:	www.energycenter.org

For press inquiries about the CPUC portion of the California Solar Initiative, contact:

Terrie Prosper, Press Office
California Public Utilities Commission
505 Van Ness Ave.
San Francisco, CA 94102-3298
Email: tdp@cpuc.ca.gov or 415-703-2160

For programmatic inquiries about the CPUC portion of the California Solar Initiative, contact:

Molly Sterkel
Supervisor for California Solar Initiative and Distributed Generation
California Public Utilities Commission, Energy Division
505 Van Ness Ave.
San Francisco, CA 94102-3298
Email: mts@cpuc.ca.gov or 415-703-1873

CPUC Energy Division Staff for the California Solar Initiative Staff, January 2007

Melicia Charles	mvc@cpuc.ca.gov
Nicolas Chaset	nlc@cpuc.ca.gov
Sachu Constantine	sco@cpuc.ca.gov
Elizabeth Helton	eah@cpuc.ca.gov
Amy Reardon	arr@cpuc.ca.gov
Curtis Seymour	css@cpuc.ca.gov
Molly Sterkel	mts@cpuc.ca.gov

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